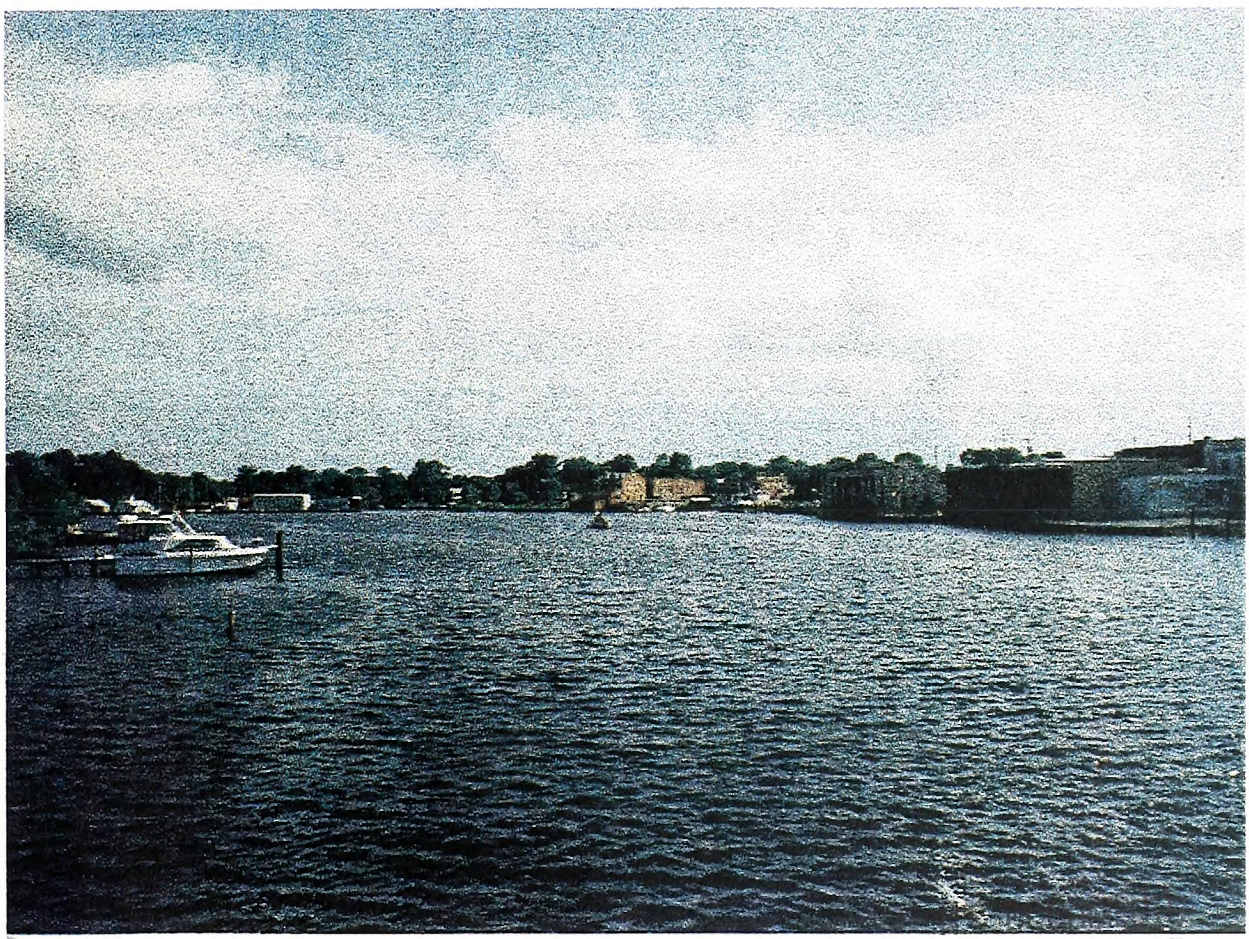
North Carolina Department of Transportation
Division of Highways
Statewide Planning Branch

Elizabeth City
Thoroughfare Plan



January 1997

THOROUGHFARE PLAN

FOR

ELIZABETH CITY, NORTH CAROLINA

Prepared by the:

Statewide Planning Branch
Division of Highways
N.C. Department of Transportation

In Cooperation with the:

City of Elizabeth City
Federal Highway Administration
N.C. Department of Environment, Health, & Natural Resources
U.S. Army Corps of Engineers
National Marine Fisheries Service
N.C. Wildlife Resources Commission
U.S. Fish and Wildlife Service
N.C. Department of Cultural Resources

1996

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12/31/96

ACKNOWLEDGMENTS

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I. INTRODUCTION

This report documents the findings of a study that examined the present and future transportation needs for the Elizabeth City area and culminated in the mutual adoption of a Thoroughfare Plan. (see Figures D-1 and D-2)

Initiative for plan implementation will rest largely with the policy boards and citizens of the area. The scope of highway needs throughout the State greatly outweighs the available funding. It is, therefore, necessary that local areas aggressively pursue funding for desired projects.

It must be emphasized that the Thoroughfare Plan is based on anticipated growth of the urban area. Actual growth rates and patterns may differ from those anticipated and it may become necessary to accelerate or retard the development of thoroughfares or to make revisions to the proposed Plan. It is desirable to review the Plan in detail about every ten years to adjust the thoroughfare system to reflect the actual growth and type of development.

The transportation planning process was initiated in Elizabeth City in 1961 when the Community Planning Division of the North Carolina Department of Conservation and Development and the Advance Planning Department of the North Carolina State Highway Commission cooperatively developed a Thoroughfare Plan. This Plan was adopted by Elizabeth City on June 5, 1961 and by the State Highway Commission on August 3, 1961.

At the request of Elizabeth City, a comprehensive review of the 1961 Plan was completed by the Advanced Planning Department in 1965. This review led to the adoption of an updated Thoroughfare Plan by Elizabeth City on November 8, 1965 and by the State Highway Commission on March 2, 1966.

In 1977, an attempt was made to update the Thoroughfare Plan. However, due largely to the controversy over a proposal to widen Water Street, no action was taken at that time. In 1988, at the request of Elizabeth City, a comprehensive review of the 1977 Plan was completed. This review led to the adoption of an updated Thoroughfare Plan by Elizabeth City on November 7, 1988 and by the North Carolina Department of Transportation on January 13, 1989.

GEOGRAPHIC LOCATION FOR ELIZABETH CITY NORTH CAROLINA

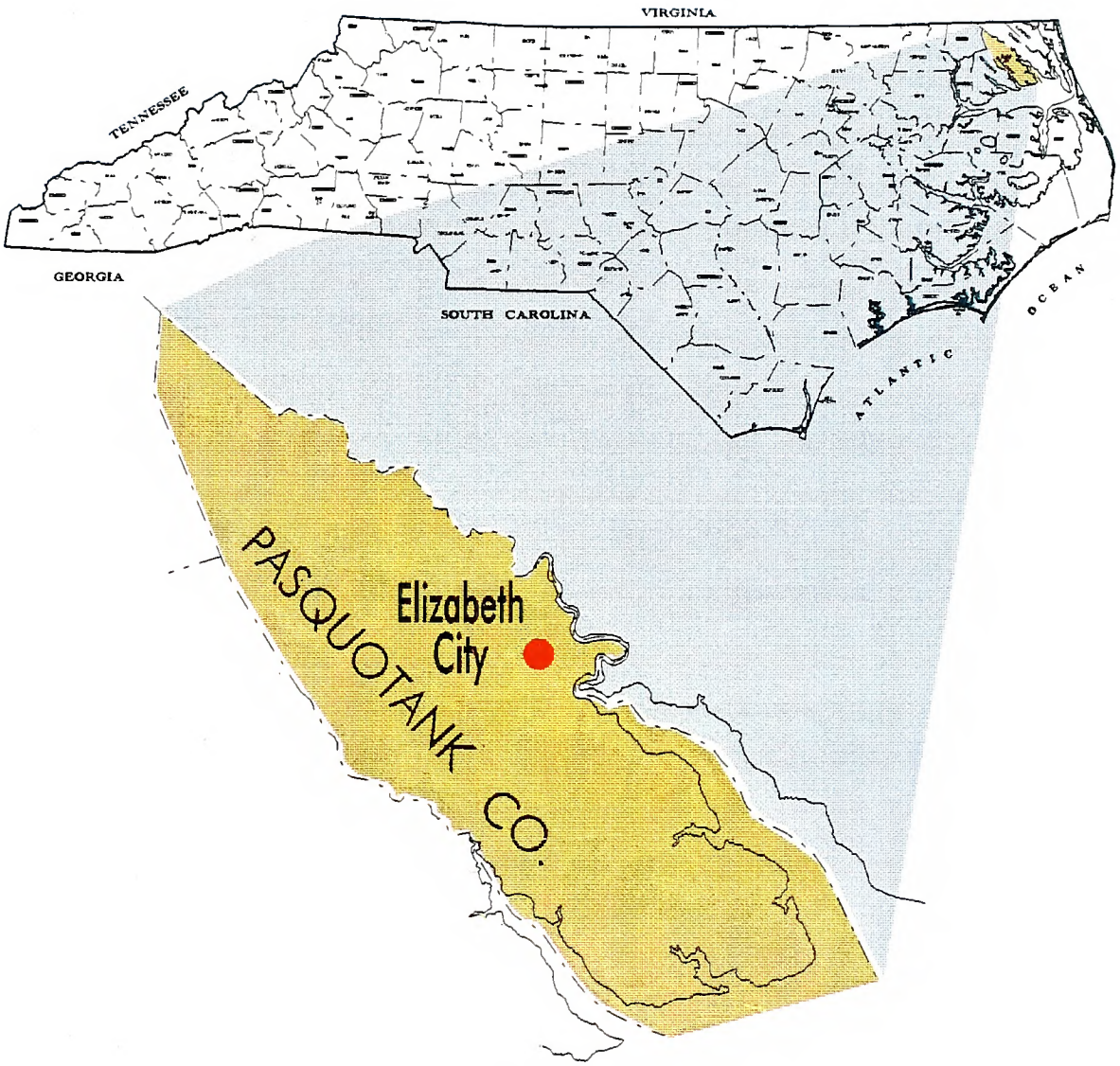

FIGURE 1

II. THOROUGHFARE PLANNING PRINCIPLES

Objectives of a Thoroughfare Plan

Typically, the street system occupies 25 to 30 percent of the total developed land in an urban area. Since the system is permanent and expensive to build and maintain, much care and foresight is needed in its development. Thoroughfare planning is the process public officials use to assure the development of the most appropriate street system that will meet existing and future travel desires within the urban area.

The primary aim of a thoroughfare plan is to guide the development of the urban street system in a manner consistent with the changing traffic patterns. Thoroughfare plan implementation allows the urban street system to be developed in an efficient manner, thereby providing a maximum utilization of the system and minimizing the amount of land used for street purposes. In addition to providing for traffic needs, the thoroughfare plan should embody those details of good urban planning necessary to present a pleasing and efficient urban community. The location of present and future housing, commercial, and industrial development affects major street and highway locations. Conversely, the location of major streets and highways within the urban area will influence the urban development pattern.

Other objectives of a thoroughfare plan include:

1. providing for the orderly development of an adequate major street system as land development occurs,

2. reducing travel and transportation costs,

3. reducing the cost of major street improvements to the public through the coordination of the street system with private action,

4. enabling private interests to plan their actions, improvements, and development with full knowledge of public intent,

5. minimizing disruption and displacement of people and businesses through long range advance planning for major street improvements.

6. reducing environmental impacts, such as air pollution, resulting from transportation, and

7. increasing travel safety.

Thoroughfare planning objectives are achieved by using both construction and non-construction methods to improve traffic

conditions on existing thoroughfares and by improving the system efficiency through system coordination and layout.

Construction Methods Used to Improve Traffic Conditions on Existing Thoroughfares

In terms of vehicular traffic, a street's capacity is defined as the maximum number of vehicles which can pass a given point on a roadway during a given time period under prevailing roadway and traffic conditions. Capacity is affected by the physical features of the roadway, nature of traffic, and weather. Increasing the capacity of a road will decrease the congestion drivers experience.

Methods involving construction which are used to improve vehicular capacity include street widening, intersection improvements, improving vertical and horizontal alignment, and eliminating roadside obstacles. For example, the widening of a street from two to four lanes can more than double the capacity of the street.

Non-construction Methods Used to Improve Traffic Conditions on Existing Thoroughfares

One non-construction method used to alleviate congestion on existing thoroughfares is alteration of the way existing streets operate. If operational changes are made, little construction is typically involved and can be a cost effective way to solve transportation problems. The following are operational changes used to alleviate congestion:

1. Control of access - a roadway with complete access control can often carry three times the traffic handled by a non-controlled access street with identical lane width and number.

2. Parking removal - Increases capacity by providing additional street width for traffic flow and reducing friction to flow caused by parking and unparking vehicles.

3. One-way operation - The capacity of a street can sometimes be increased 20-50%, depending upon turning movements and overall street width, by initiating one-way traffic operations. One-way streets can also improve traffic flow by decreasing potential traffic conflicts and simplifying traffic signal coordination.

4. Reversible lanes - Reversible traffic lanes may be used to increase street capacity in situations where heavy directional flows occur during peak periods.

5. Signal phasing and coordination - Uncoordinated signals and poor signal phasing restrict traffic flow by creating

excessive stop-and-go operation.

Altering travel demand is a second non-construction option that will help alleviate congestion on the existing streets. Travel demand can be reduced or altered in the following ways:

1. Encourage people to form carpools and vanpools for journeys to work and other vehicle trip purposes. This reduces the number of vehicles on the roadway and raises the people carrying capability of the street system.

2. Encourage the use of transit and bicycle modes.

3. Encourage industries, businesses, and institutions to stagger work hours or establish variable work hours for employees. This will spread peak travel over a longer time period and thus reduce peak hour demand.

4. Plan and encourage land use development or redevelopment in a more travel efficient manner.

System Efficiency

Another method of improving travel conditions is the development of a more efficient system of streets that will better serve travel desires. A more efficient system can reduce travel distances, time, and cost to the user. Improvements in system efficiency can be achieved through the concept of functional classification of streets and development of a coordinated major street system.

Functional Classification

Streets perform two primary functions -- traffic service and land service, which when combined, are basically incompatible. The conflict is not serious if both traffic and land service demands are low. However, when traffic volumes are high, conflicts created by uncontrolled and intensely used abutting property leads to intolerable traffic flow friction and congestion.

The underlying concept of the thoroughfare plan is that it provides a functional system of streets which permits travel from origins to destinations with directness, ease, and safety. Different streets in the system are designed and called on to perform specific functions, thus minimizing the traffic and land service conflict. Streets are categorized according to their function as local access streets, minor thoroughfares, major thoroughfares, or freeways/expressways.

Local Access Streets provide access to abutting property.

They are not intended to carry heavy volumes of traffic and should be located such that only traffic with origins and destinations on the streets could be served. Local streets may be further classified as either residential, commercial, or industrial depending upon the type of land use which they serve.

Minor Thoroughfares collect traffic from local access streets and carry it to the major thoroughfares. They may in some instances supplement the major thoroughfare system by facilitating minor through traffic movements. A third function that may be performed is that of providing access to abutting property. They should be designed to serve limited areas so that their development as major thoroughfares will be prevented.

Major Thoroughfares are the primary traffic arteries of the city. Their function is to move intra-city and inter-city traffic. The streets which comprise the major thoroughfare system may also serve abutting property, however, their principle function is to carry traffic. They should not be bordered by uncontrolled strip development because such development significantly decreases the ability of the thoroughfare to carry traffic and each driveway is a danger and impediment to traffic flow. Major thoroughfares may range from a two-lane street carrying minor traffic volumes to major streets with four or more traffic lanes. Parking normally should not be permitted on major thoroughfares.

Freeways/expressways primarily serve through traffic. An expressway will have partial control of access, and generally have grade separations at major intersections. A freeway will have full control of access.

Idealized Major Thoroughfare System

A coordinated system of major thoroughfares and freeways/expressways forms the basic framework of the urban street system. A major thoroughfare system which is most adaptable to desire lines of travel within an urban area is the radial-loop system. It permits movement between various areas of the city with maximum directness. This system consists of several functional elements--radial streets, crosstown streets, loop system streets, and bypasses (Figure 2)

Radial streets provide for traffic movement between points located on the outskirts of the city and the central area. This is a major traffic movement in most cities and the economic strength of the central business district depends upon the adequacy of this type of thoroughfare.

If all radial streets crossed in the central area, an intolerable congestion problem would result. To avoid this problem, it is very important to have a system of **crosstown streets** which form a loop around the central business district. This system allows traffic moving from origins on one side of the

central area to destinations on the other side to follow the area's border. It also allows central area traffic to circle and then enter the area near a given destination. The effect of a good crosstown system is to free the central area to function more adequately in its role as a business or pedestrian shopping area.

Loop system streets move traffic between suburban areas of the city. Although a loop may completely encircle the city, a typical trip may be from an origin near a radial thoroughfare to a destination near another radial thoroughfare. Loop streets do not necessarily carry heavy volumes of traffic, but they function to help relieve central areas. There may be one or more loops, depending on the size of the urban area. They are generally spaced one-half mile to one mile apart, depending on the intensity of land use.

A **bypass** is designed to carry traffic through or around the urban area, thus providing relief to the city street system by removing traffic which has no desire to be in the city. Bypasses are usually designed to high-capacity standards, with control of access. Occasionally, a bypass with low traffic volume can be designed to function as a portion of an urban loop. The general effect of bypasses is to expedite the movement of through traffic and to improve traffic conditions within the city. By freeing the local streets for use by shopping and home-to-work traffic, bypasses tend to increase the economic vitality of the local area.

Application of Thoroughfare Planning Principles

The concepts presented in the discussion of construction and non-construction methods used to improve traffic conditions on existing thoroughfares, system efficiency, functional classification, and idealized major thoroughfare system are the conceptual tools available to the transportation planner in developing a thoroughfare plan. In actual practice, a thoroughfare plan is developed for established urban areas and is constrained by the existing public attitudes and goals, and current expectations of future land use. Compromises must be made because of these constraints and the many other factors that affect major street locations.

Throughout the thoroughfare planning process it is necessary from a practical viewpoint that certain basic principles be followed as closely as possible. These principles are as follows:

1. The plan should be derived from a thorough knowledge of today's travel - its component parts as well as factors that contribute to it, limit it, and modify it.

2. Traffic demands must be sufficient to warrant the designation and development of each major street. The thoroughfare plan should be designed to accommodate a large portion of all major traffic movements on a relatively few streets.

3. The plan should conform to and provide for the land development plan of the area.

4. Certain considerations must be given to urban development beyond the current planning period. Particularly in outlying or sparsely developed areas which have development potential, it is necessary to designate thoroughfares on a long-range planning basis to protect right-of-way for future thoroughfare development.

5. While being consistent with the above principles and realistic in terms of travel trends, the plan must be economically feasible.

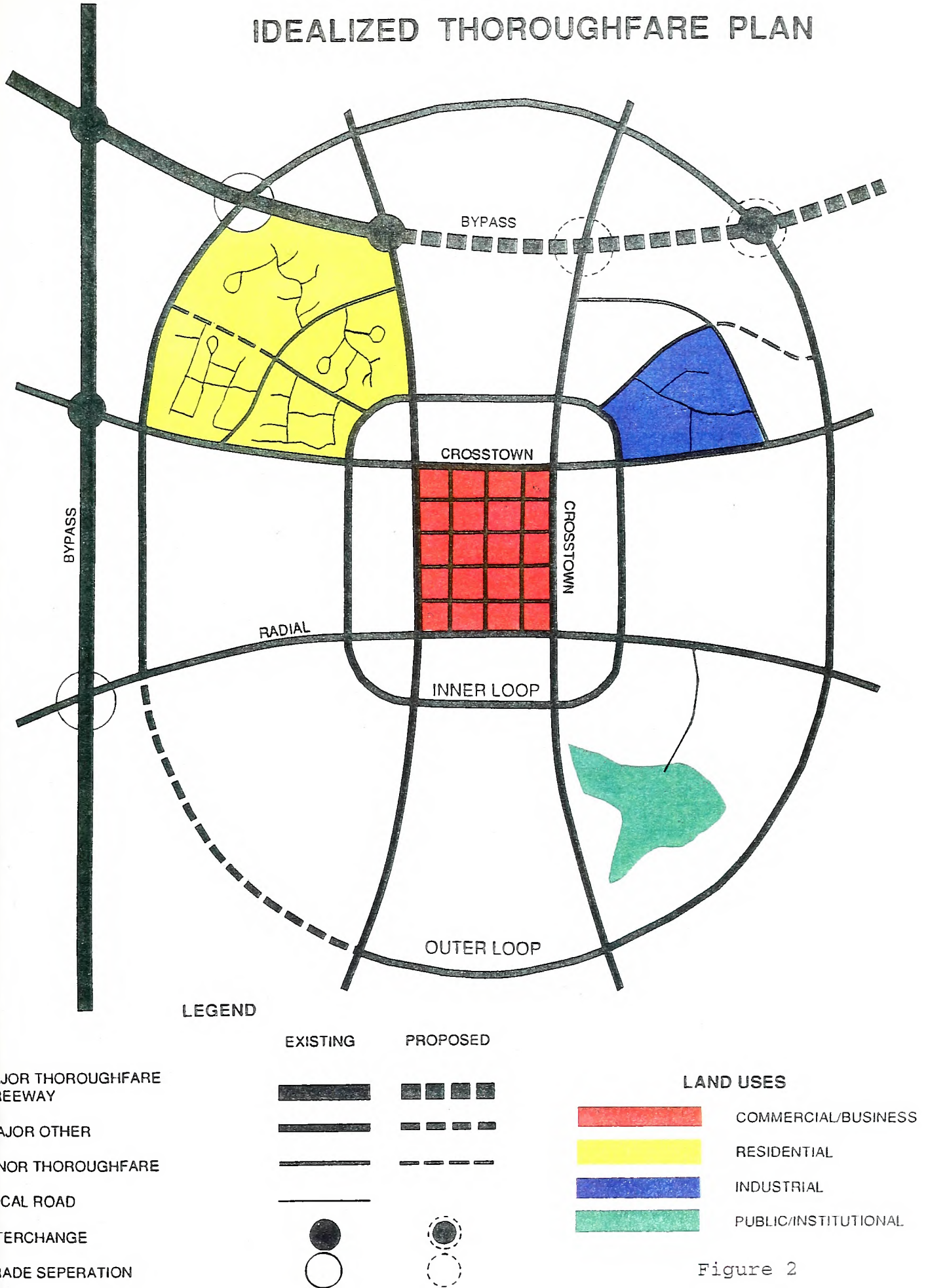
IDEALIZED THOROUGHFARE PLAN
BYPASS
CROSSTOWN
BYPASS
CROSSTOWN
RADIAL
INNER LOOP
OUTER LOOP
LEGEND
EXISTING
PROPOSED
MAJOR THOROUGHFARE FREEWAY
MAJOR OTHER
MINOR THOROUGHFARE
LOCAL ROAD
INTERCHANGE
GRADE SEPERATION
LAND USES
COMMERCIAL/BUSINESS
RESIDENTIAL
INDUSTRIAL
PUBLIC/INSTITUTIONAL

Figure 2

III. EXISTING AND PROJECTED POPULATION AND EMPLOYMENT

Introduction

Travel is directly related to population, employment, and the economic vitality of an area. Changes in one or more of these factors will affect the amount of traffic on the roads and consequently the delay that drivers experience. In evaluating travel demand for the present and future, it is important to evaluate each of these factors and integrate their effects.

A major goal of this study was to predict travel on the area's street system by using land use as the independent variable. The traffic forecasting models were calibrated using housing, employment, and traffic counts gathered in 1995. However, the most important part of this study was projecting the magnitude and location of future growth. Forecasts were made for the number and location of new housing units and jobs. These were subsequently converted into vehicle trips and the existing street system and Thoroughfare Plan was analyzed.

The Planning Period and Planning Area

Since the housing, employment, and traffic counts were gathered in 1995, this is considered the base year. The planning period for this study is 25 years. Therefore, the goal of this study was to develop solutions for the transportation problems that presently exist or will come into existence before the year 2020. The planning area is shown in Figure 3. For purposes of data gathering and analysis, the planning area was divided into traffic analysis zones. These are areas in which housing and employment data was counted and categorized. Then forecasts were made that predicted what the housing and employment data would be in each of these zones in the year 2020.

Population Projections

The most important estimate made during the development of the Thoroughfare Plan is the future population of the planning area. Government census data is available to gauge the historic population changes in Pasquotank County and Elizabeth City. (see Figure 4) From 1970 to 1990, there was no growth in Elizabeth City proper. However, Pasquotank County had an annual growth rate of approximately 0.6 percent from 1970 to 1980 and approximately 1.0 percent from 1980 to 1990. Since the planning boundaries contain Elizabeth City proper and part of the county, it was decided that a growth rate of 0.9 percent would be most appropriate with the bulk of the population growth being allocated to the traffic analysis zones located on the fringes of Elizabeth City proper.

A 1995 housing survey conducted by NCDOT in the planning area yielded a count of 10,228 dwelling units. (see Table A-1) The population for the planning area was then calculated by multiplying the number of dwelling units by the average occupancy rate of 2.43 persons per dwelling unit for Pasquotank County. This revealed that the population in the planning area was approximately 24,850 persons.

To project the planning area population to the design year of 2020, the 0.9 percent growth rate discussed previously was applied. Using this methodology, the planning area population was projected to be approximately 31,085 persons in the year 2020. Since trips are calculated based on dwelling units, it is necessary to convert this projected population back to dwelling units. The statewide average occupancy rate is declining and this trend is also occurring in the Elizabeth City area. Therefore, an average occupancy rate of 2.32 persons per dwelling unit was used. This revealed that the projected number of dwelling units in the planning area in 2020 will be approximately 13,399. This represents an increase of 3171 dwelling units in the planning area. These 3171 dwelling units were distributed in the planning area based on housing trends, zoning ordinances and available acreage. (see Table A-3 and Figure 5)

Employment Projections

A 1995 employment survey conducted by NCDOT revealed that there were 13,022 persons employed in the planning area. (see Table A-2) To project the planning area employment to the design year of 2020, it was assumed that employment would grow at the same rate as the population. Therefore, a growth rate of 0.9 percent was used and this yielded a projection of approximately 3300 new jobs in 2020. These 3300 new jobs were distributed in the planning area based on employment trends, zoning ordinances and available acreage. (see Table A-4 and Figure 5)

PLANNING AREA

AND

ZONE MAP

FIGURE 3

LEGEND

- PLANNING AREA BOUNDARY
- SCREENLINE
- ZONE BOUNDARY

ELIZABETH CITY

March 1996

PASQUOTANK COUNTY

NORTH CAROLINA

Prepared by the
North Carolina Department of Transportation
Division of Highways–Statewide Planning Branch
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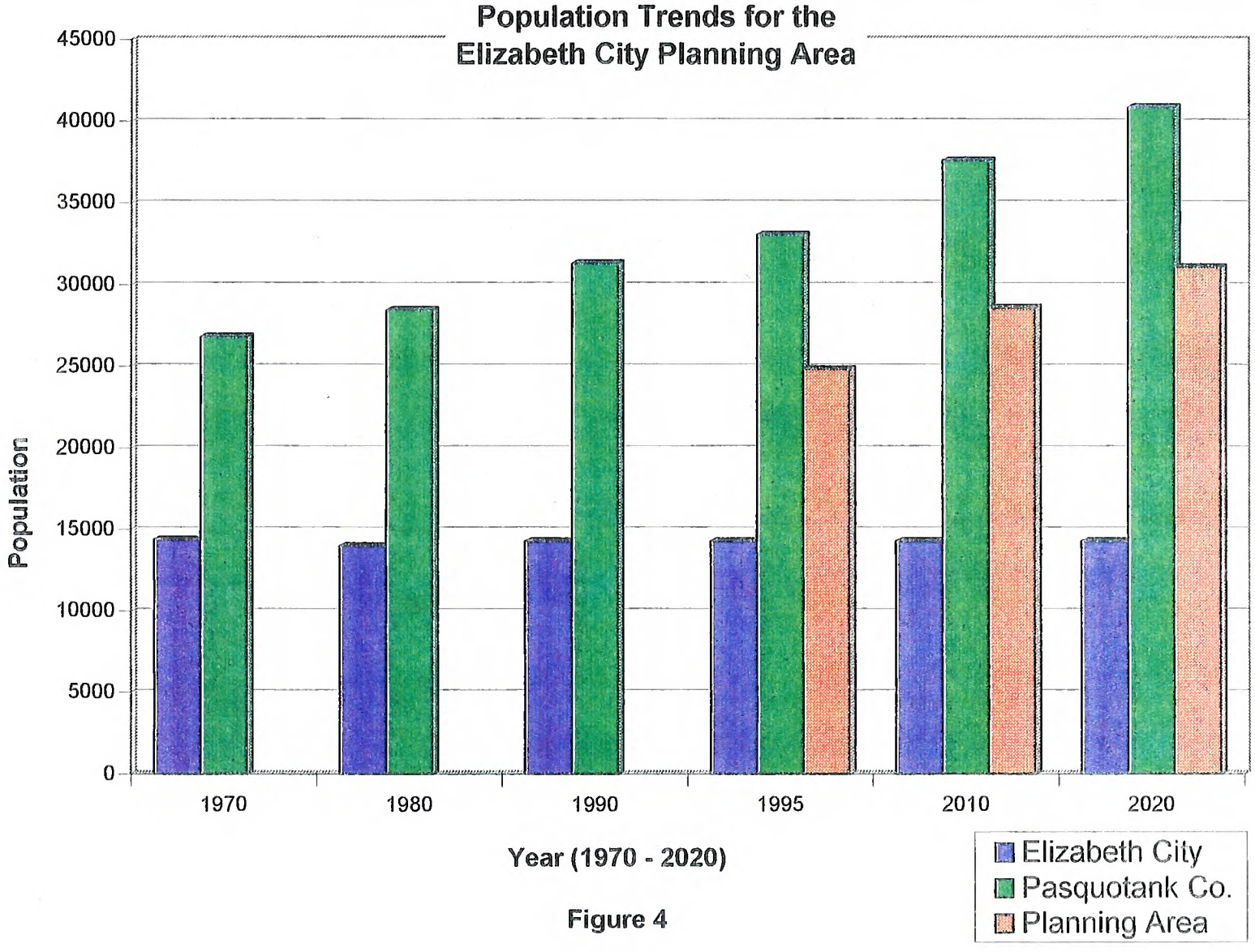
Population Trends for the
Elizabeth City Planning Area
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
Population
1970
1980
1990
1995
2010
2020
Year (1970 - 2020)
Elizabeth City
Pasquotank Co.
Planning Area

Figure 4

SCREENLINE "A"

SCREENLINE "B"

SCREENLINE "B"

SCREENLINE "A"

PROJECTED HIGH GROWTH AREAS

FIGURE 5

LEGEND

- PLANNING AREA BOUNDARY
- SCREENLINE
- ZONE BOUNDARY
- PROJECTED TO HAVE A NET INCREASE OF 50 OR MORE DWELLING UNITS BETWEEN 1995 AND 2020
- PROJECTED TO HAVE A NET INCREASE OF 50 OR MORE EMPLOYEES BETWEEN 1995 AND 2020

ELIZABETH CITY

PASQUOTANK COUNTY

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June 17, 1996

IV. TRAVEL FORECASTING MODELS

Introduction

The reason that a travel forecasting model is developed is to predict the volume of vehicles that will be using the street system under a given set of circumstances. The model gives the transportation planner the ability to predict what effect alternative transportation solutions would have on the street system.

The ability to estimate traffic volumes depends heavily on the prediction of the travel desires of the public. Simply stated, in order to predict traffic volumes we must first gain a knowledge of where people are and where they want to go.

Elizabeth City Model

The first step in the modeling process in Elizabeth City was to construct a model that would predict 1995 traffic volumes. Some of the data necessary to construct the model included existing housing and employment, traffic volumes, and the characteristics of the existing street system. The housing and employment data was gathered on a zonal basis by conducting field and telephone surveys. (See Table A-1 and A-2) The characteristics of the existing street system and traffic volumes were gathered by conducting field surveys. After the data was gathered, a traffic forecasting model was built using the TRANPLAN computer program and the 1995 traffic volumes were predicted. The predicted traffic volumes were then compared to actual traffic counts to test the validity of the assumptions made during the modelling process. The assumptions were then altered as necessary to make the model adequately duplicate traffic volumes.

The second step was to predict what the future traffic volumes would be assuming that the only road projects built between 1995 and 2020 are fully or partially funded projects in the 1996-2002 Transportation Improvement Program (T.I.P.). The fully and partially funded projects that were input into the model were: R-2515A, U-3420, U-3449, W-3400, W-3401, and R-2414. The Elizabeth City Planning Department supplied estimates for both housing and employment on a zonal basis for the years 2010 and 2020 assuming that the T.I.P. projects would be constructed. The TRANPLAN computer program was then rerun using the altered housing and employment data to predict traffic volumes.

The final step was the identification of roads which would be unable to adequately handle the volume of vehicles predicted by the model and the identification of modifications necessary to alleviate these problems. The modifications consisted of widening and improving existing

roads, changing the operational characteristics of existing roads, and the addition of new roads. These modifications were tested using the TRANPLAN computer program to determine their effectiveness.

Appendix A contains more detailed and technical information on the travel forecasting process.

V. ANALYSIS OF THE EXISTING STREET SYSTEM

Introduction

This chapter presents an analysis of the ability of the existing street system to serve the area's travel desires both in the present and in the future. Emphasis was placed not only on detecting the deficiencies in the transportation system, but on understanding their cause. Travel deficiencies may be localized and the result of substandard highway design, inadequate pavement width, or intersection controls. Alternately, the underlying problem may be a system deficiency such as the need for a bypass, loop facility, construction of missing links, or additional radials.

Capacity Deficiency Analysis

A good indication of the adequacy of a street is a comparison of the traffic volumes with the **practical capacity.** The practical capacity is the volume of vehicles that a street can accommodate without substantial discomfort to the motorist. For planning purposes, the practical capacity is considered to be Level of Service (LOS) D for existing facilities. See Appendix E for information on Level of Service (LOS).

An analysis of the major street network in Elizabeth City indicated that the following segments of roadway had traffic volumes in 1995 that were above their practical capacities:

U.S. 17 from Church Street to Elizabeth Street

U.S. 17 from Road Street to south side of bridge over Knobbs Creek

U.S. 17 from north side of bridge over Knobbs Creek to Whitehurst Lane

U.S. 17 from Hastings Lane to Culpepper Lane

Road Street from Ehringhaus Street to U.S. 17

Water Street from Fearing Street to Elizabeth Street

U.S. 158/N.C. 34 from 600 meters east of Water Street to Country Club Road

In addition to analyzing the major street network for deficiencies in 1995, the design year(2020) was analyzed. Since there is a high probability that projects programed and funded(fully or partially) in the 1996-2002 Transportation Improvement Program (T.I.P.) will be constructed by 2020, the

network was modified to reflect the construction of these streets. The fully and partially funded projects that were input into the model were: R-2515A, U-3420, U-3449, W-3400, W-3401, and R-2414. The analysis indicated that the following streets would have traffic volumes that exceeded their practical capacity:

U.S. 17 from Halstead Boulevard to Culpepper Lane

Road Street from Ehringhaus Street to U.S. 17

Water Street from Fearing Street to Elizabeth Street

See Figures 6 and 7 for a graphical representation of the streets that are over-capacity.

System Deficiencies

A street network has a system deficiency when it does not have an adequate system of bypasses, loops, radials, and crosstown streets to carry traffic efficiently. The following system deficiencies were identified for the Elizabeth City Planning Area.

Lack of north-south radials and crosstown streets

Lack of a controlled access bypass

Traffic Accidents

Traffic accidents are of assistance in defining problem areas and often pinpoint a deficiency such as poor design, inadequate signing, or poor sight distance. The 10 intersections in the Elizabeth City area with the highest number of accidents from June 1992 thru June 1995 are:

Hughes Boulevard and Road Street - 82 accidents

Ehringhaus Street and Halstead Boulevard - 62 accidents

Halstead Boulevard and Hughes Boulevard - 48 accidents

Ehringhaus Street and Road Street - 37 accidents

Ehringhaus Street and McArthur Street - 33 accidents

Church Street and Road Street - 31 accidents

Hughes Boulevard and Elizabeth Street - 31 accidents

Road Street and Ward Street - 30 accidents

Church Street and Hughes Boulevard - 29 accidents

Elizabeth Street and Water Street - 27 accidents

1995 TRAFFIC ON
EXISTING STREET NETWORK

FIGURE 6

LEGEND

REPRESENTS A ROAD THAT IS BETWEEN 1 AND 25 PERCENT "OVER-CAPACITY" IN 1995

REPRESENTS A ROAD THAT IS BETWEEN 26 AND 50 PERCENT "OVER-CAPACITY" IN 1995

REPRESENTS A ROAD THAT IS BETWEEN 51 AND 75 PERCENT "OVER-CAPACITY" IN 1995

REPRESENTS A ROAD THAT IS BETWEEN 76 AND 100 PERCENT "OVER-CAPACITY" IN 1995

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2020 TRAFFIC ON EXISTING STREET NETWORK PLUS PARTIALLY AND FULLY FUNDED PROJECTS IN THE 1996-2002 TIP

FIGURE 7

LEGEND

- PARTIALLY OR FULLY FUNDED PROJECT IN THE 1996-2002 TIP
- REPRESENTS A ROAD THAT IS PROJECTED TO BE BETWEEN 1 AND 25 PERCENT "OVER-CAPACITY" IN 2020
- REPRESENTS A ROAD THAT IS PROJECTED TO BE BETWEEN 26 AND 50 PERCENT "OVER-CAPACITY" IN 2020
- REPRESENTS A ROAD THAT IS PROJECTED TO BE BETWEEN 51 AND 75 PERCENT "OVER-CAPACITY" IN 2020
- REPRESENTS A ROAD THAT IS PROJECTED TO BE BETWEEN 76 AND 100 PERCENT "OVER-CAPACITY" IN 2020

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VI. EVALUATION OF ALTERNATIVE PLANS

Introduction

The process of developing, testing, and evaluating alternative plans involved a number of considerations. These included area goals and objectives, identified capacity and system deficiencies, environmental and social impacts, and anticipated land development. Travel forecasts provide a basis for evaluation of alternatives as to ability to serve future travel desires. Aerial photography, field reconnaissance, environmental data sources, and cooperation with environmental resource agencies provide a basis for evaluation of alternatives in regards to environmental issues. Aerial photography, field reconnaissance, cooperation with the city staff, and input from citizens provided other bases for plan evaluation.

Do Nothing Alternative

A "do nothing" alternative was considered in weighing the desirability of developing a thoroughfare plan. This plan is essentially as the name implies, there are no construction improvements to the system. Regular maintenance would still be performed. Some of the major advantages of the "do nothing" alternative are:

1. No additional capital investment
2. No additional construction disruption
3. No additional land acquisition
4. No additional displacement of people or property
5. No new environmental damage caused by construction

However, there are a number of disadvantages to a "do nothing" alternative which would have significant effects on the urban environment. A few are listed below:

1. Increased congestion on major thoroughfares will cause traffic to divert to residential and local streets
2. Existing congested and bottleneck situations will worsen
3. Increased accidents and safety problems
4. Increased travel time and road user costs
5. Increased noise and air pollution resulting from traffic congestion
6. Reduced mobility and longer routes for emergency vehicles.
7. Increased driver frustration due to traffic congestion
8. Economic vitality of area may suffer due to traffic congestion on the transportation system

Non-construction Alternatives

In addition to the "do nothing" alternative, it is desirable to take a more in depth look at the existing street system to determine if **non-construction** options can enable the existing system to serve future travel. The following is a discussion of non-construction options:

* **Control of access** maintains the capacity of a road by not allowing strip commercial development to create large volumes of turning traffic at many closely spaced locations. A route where some control of access should be considered is Halstead Boulevard. While it is recognized that businesses will locate along this roadway, it would be beneficial to attempt to control the number of future curb cuts as the route continues to develop. Generally the topic of access control initiates a tug of war between business interests and transportation interests. Therefore, these recommendations are usually decided in a political arena.

* Existing street capacities can be improved by **removing on-street parking.** Prior to removal of on-street parking, the excess or deficiency of parking in the immediate area must be considered. The best example of this situation is Water Street from Fearing Street to Elizabeth Street. As with control of access issues, this issue generally initiates a tug of war between business interests and transportation interests and is decided in a political arena.

* The implementation of **one-way streets** can increase the capacities of the facilities by up to 50 percent. One-way pairs have the additional benefit of increasing the safety of the facilities involved. Portions of Main Street and Colonial Street are proposed as a one-way pair in this report.

* Prior to a **traffic signal** being installed, the through movement on the primary facility is permitted continuously. Upon signal installation, the time permitted for the through movement on the primary facility is significantly reduced to allow for conflicting movements, possibly as much as 50 percent. This results in a reduced capacity for the primary facility. Therefore, it is important that signals be installed judiciously, and with consideration to the overall impact on the transportation system.

* An aggressive **carpool, vanpool,** or **public transit** program would process the same number of person-trips while decreasing the number of vehicle-trips and thus would decrease congestion. The size of Elizabeth City

suggests that while these options would be a valuable asset, they would not significantly decrease congestion.

* **Bicycling** is increasing in popularity as a mode of travel. In fact, the Board of Transportation states in its 1991 policy on bicycles, "...the Board of Transportation finds that bicycling is a bonafide highway purpose subject to the same rights and responsibilities and eligible for the same considerations as other highway purposes...". The North Carolina Department of Transportation's Bicycle Coordinator is available to assist communities with bicycle route planning.

* **Altering work hours (or flex-time)** such that the beginning and ending times are staggered can reduce travel in the peak hour. The resulting peak period would be less congested, but last longer. Therefore, the total traffic carrying ability of an existing street can be increased with no capital outlay for street improvements.

* **restrictions on growth** would also slow traffic growth and delay the need for street improvements. This approach, however, would adversely affect the economy of the planning area. A much better approach is to coordinate growth with a progressive system of transportation improvements that anticipate increases in travel desires.

These non-construction alternatives will improve operations on the existing system, but they alone cannot accommodate the long term traffic growth in the area. The "do nothing" alternative is not viable in transportation planning for the Elizabeth City area because of the overwhelming disadvantages.

Construction Alternative - 1987 Thoroughfare Plan

The 1987 Thoroughfare Plan for Elizabeth City was adopted by Elizabeth City in 1988 and by the North Carolina Department of Transportation in 1989. Since there was an existing Plan, it was tested to determine if it was still adequate. A major component of this Plan was the proposed U.S. 17 Bypass. Since the Plan's adoption, further studies have been done on the proposed U.S. 17 Bypass and the location has changed. This change, along with changes in projected land use make the 1987 Thoroughfare Plan inadequate in its present form. See Figure 8 for the 1987 Thoroughfare Plan.

Construction Alternative - Mutually Adopted 1996 Thoroughfare Plan

The Mutually Adopted 1996 Thoroughfare Plan is a result of updating the 1987 Thoroughfare Plan to account for changes in the location of the proposed U.S. 17 Bypass, and updated traffic projections and land use. See Section VII for a more extensive discussion of the 1996 Plan. The Thoroughfare Plan resulting from this study is shown graphically in Figures D-1 and D-2.

The following streets or highways on new location are recommended by the 1996 Thoroughfare Plan:

1. U.S. 17 Bypass

2. Connection of existing Halstead Boulevard to the proposed U.S. 17 Bypass

3. Connection of existing Main Street Extension to the proposed U.S. 17 Bypass

4. Extension of Walker Avenue to Roanoke Avenue

5. Extension of Selby Road west to Oak Stump Road and east to Peartree Road

6. Extension of existing Creek Road south to the proposed Halstead Boulevard connector and north to existing U.S. 17

7. Extension of existing Elizabeth Street to existing Main Street Extension

8. Minor realignment of existing Main Street Extension near the proposed Elizabeth Street Extension

The Mutually Adopted Thoroughfare Plan consists only of the information depicted on Figures D-1 and D-2. No cross-section recommendations were adopted by Elizabeth City or the Department of Transportation. However, an important function of a thoroughfare plan study is to provide recommendations as to what the cross-sections of existing and proposed facilities designated freeway/expressway, major thoroughfare, or minor thoroughfare should be. The following is a summary of the significant changes recommended for the existing street system.

Major widening is recommended on the following streets:

1. U.S. 158/N.C. 34 from 600 meters east of Water Street to the eastern planning area boundary

2. Hughes Blvd. from Church Street to the southern end

of the bridge over Knobbs Creek.

3. Hughes Blvd. from College of the Albemarle South Entrance to Whitehurst Lane

4. Hughes Blvd. from Hastings Lane to Culpepper Lane

5. River Road from 1400 meters north of Weeksville Road to 430 meters north of Weeksville Road

The following operational changes are recommended:

1. Make Main Street one way from Dyer Street to Hughes Blvd. The traffic would flow west.

2. Make Colonial Avenue one way from Road Street to Hughes Blvd. The traffic would flow east.

3. Make Shepherd Street two way

Adding lanes to Water Street (from Elizabeth St. to Fearing St.) is justified from a traffic engineering perspective. It was initially recommended by Statewide Planning that Water Street (from Elizabeth St. to Fearing St.) be widened to 4 lanes. Opposition to this was voiced by both citizens and the City Council. If the street is not widened, it is projected that the traffic congestion on the street will worsen. However, the traffic congestion should not pose a significant safety risk for the motorists because the posted speed through this section is only 20 m.p.h. It is still the opinion of Statewide Planning that Water Street (from Elizabeth St. to Fearing St.) should be widened to 4 lanes. However, in light of the public opposition and the fact that there will not be a significant safety risk, no formal recommendation will be made for this section of road. It should be noted that no recommendation is made in Appendix D, "Thoroughfare Plan Street Tabulations and Recommendations".

Major widening on Road Street is justified from a traffic engineering perspective. However, a major widening would have severe impacts on residences and historical resources. Therefore, no major widening has been recommended.

For a more complete description of the recommendations for existing and proposed facilities, see "Thoroughfare Plan Street Tabulations and Recommendations" in Appendix D.

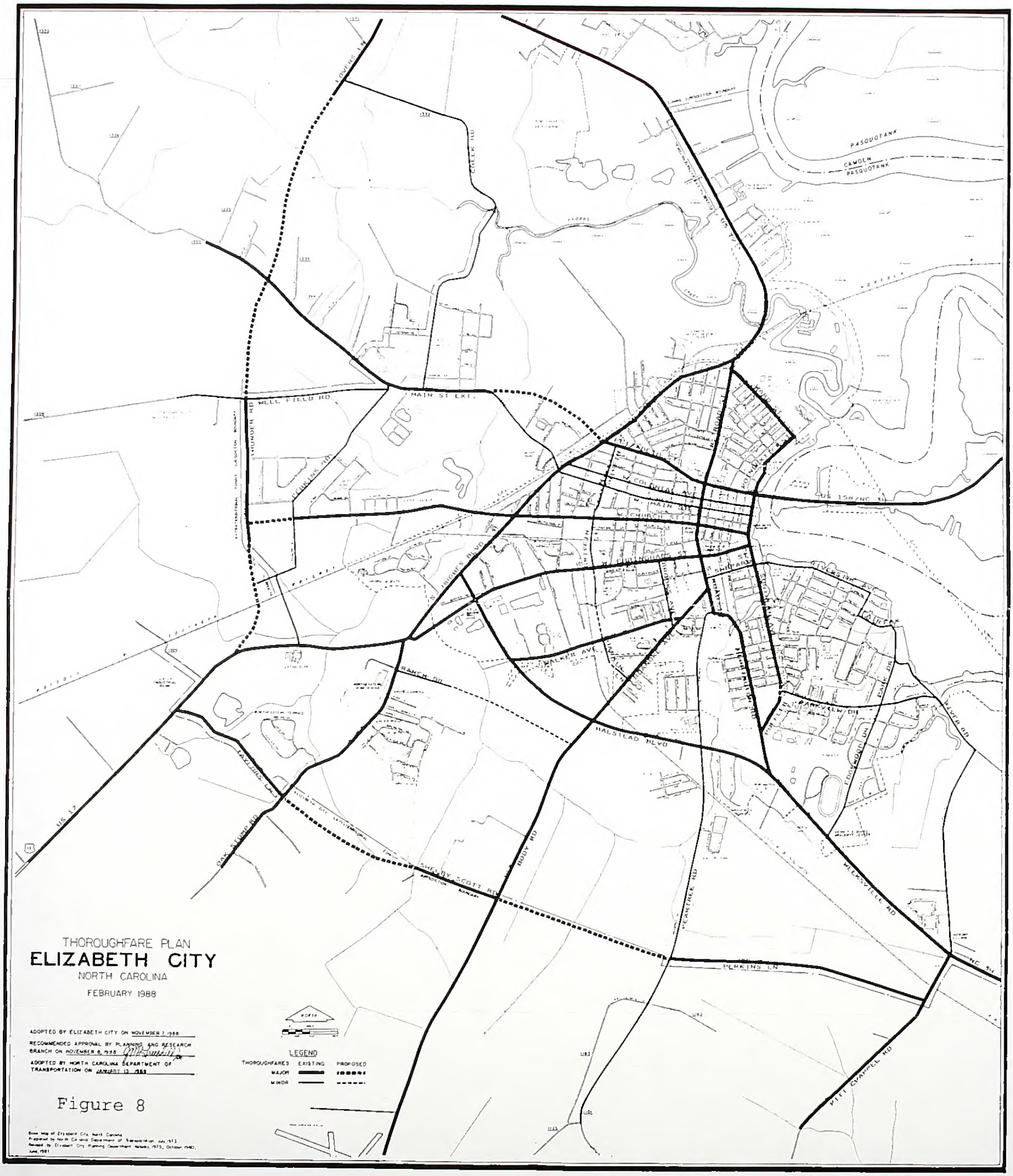
THOROUGHFARE PLAN
ELIZABETH CITY
NORTH CAROLINA
FEBRUARY 1988
ADOPTED BY ELIZABETH CITY ON NOVEMBER 7, 1988
RECOMMENDED APPROVAL BY PLANNING AND RESEARCH BRANCH ON NOVEMBER 8, 1988
ADOPTED BY NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ON JANUARY 13, 1989
LEGEND
THOROUGHFARES EXISTING PROPOSED
MAJOR
MINOR
PASQUOTANK
CAMDEN
PASQUOTANK
CALES RD
LOVERS LN
THUNDER RD
WELL FIELD RD
MAIN ST EXT.
PERKINS RD
COLONIAL AVE
MAIN ST
CHURCH ST
SHIPYARD BLVD
US 158/NC 34
WALKER AVE
RANCH RD
HALSTEAD BLVD
PARKVIEW DR
PARK DR
ELIZABETH AVE
US 17
TAYLORS LN
OAK STUMP RD
SHEEPY SCOTT RD
BODY RD
HEARTREE RD
WEEKSVILLE RD
PERKINS LN
NC 34
MITE CHAPPELL RD

Figure 8

VII. FUNCTIONAL CLASSIFICATION OF THE 1996 MUTUALLY ADOPTED THOROUGHFARE PLAN

Streets and highways are classified as freeway/expressways, major thoroughfares, minor thoroughfares, or local access streets. Freeways/expressways and major thoroughfares can be further functionally classified as bypasses, loops, radials, or crosstown facilities. The following is a discussion of the freeway/expressways, major thoroughfares, and minor thoroughfares in the Mutually Adopted 1996 Thoroughfare Plan for Elizabeth City.

Major Thoroughfares and Freeways/Expressways

Bypasses

A bypass is designed to carry traffic through or around the urban area, thus providing relief to the local street system by removing traffic which has no desire to be in the city. The following are the existing and proposed bypass facilities for the Elizabeth City Planning Area:

Proposed U.S. 17 Bypass will allow traffic to avoid the congestion, strip commercial development, and traffic signals on existing U.S. 17. If this road is not constructed, existing U.S. 17 would likely have to be widened to a six lane divided facility. This widening would have severe impacts on merchants located on this road.

U.S. 17 presently serves as the major bypass for Elizabeth City, moving traffic from areas west of Elizabeth City to Virginia. It also carries traffic destined for the Outer Banks via Elizabeth City.

Radials

The radial thoroughfare system provides for traffic movements between points in outlying areas and the central area. The following existing and proposed facilities comprise the radial system in the Elizabeth City Planning Area:

Body Road will serve as a major radial thoroughfare connecting areas southwest of Elizabeth City to Halstead Boulevard and Roanoke Avenue.

Burgess Street (from Water Street to Poindexter Street) is part of a system that carries travelers north and south.

Ehringhaus Street (from Road Street west) is a primary radial thoroughfare for the area, serving commuter travel and commercial development.

Elizabeth Street (from Road Street south) is a major east-

west radial in Elizabeth City. Much of the Outer Banks' travel is routed on this road, which must also serve school, business, and other local travel.

Proposed Elizabeth Street Extension will allow vehicles on Elizabeth Street to flow directly onto Main Street Extension. This will allow a more direct access to the proposed U.S. 17 Bypass.

Foreman Bundy Road will serve as a major radial thoroughfare connecting areas southwest of Elizabeth City to U.S. 17.

Proposed Halstead Boulevard Connector will serve as a major radial between the southern part of Elizabeth City and the proposed U.S. 17 Bypass.

Herrington Street acts as a major connector between Road Street and Weeksville Road. It serves through travel, local travel, and commuter travel to the Coast Guard Air Station.

Hoffler Street serves as a connector between residential areas around Parkview Drive and Herrington Street. It also allows Southern Avenue to function as a major radial thoroughfare.

Main Street Extension (from U.S. 17 to the proposed Elizabeth Street Extension) serves as a connector between the northwestern portion of the Planning Area and Elizabeth City

Proposed Main Street Extension Connector will provide access to the proposed U.S. 17 Bypass.

N.C. 343 serves to connect areas in Camden County with N.C. 34/U.S. 158, which in turn brings traffic into Elizabeth City

Oak Stump Road provides access to southwestern parts of the Planning Area. It also serves Northeastern High School.

Pitts-Chapel Road provides connectivity between the Perkins Lane loop system and Weeksville Road. It also serves traffic in outlying southeastern areas.

Poindexter Street serves as a radial between the downtown area and residential areas immediately to the north. It also serves Roanoke Bible College.

Road Street (from Ehringhaus St. south and Elizabeth St. north) functions as a radial thoroughfare bringing traffic to the CBD area.

Roanoke Avenue carries traffic from Road Street to Halstead Boulevard and provides access to P.W. Moore Elementary School.

Southern Avenue complements Road Street and carries north-south travel between southeastern residential areas and commercial areas.

U.S. 158/N.C. 34 is the only connection in the planning area between Elizabeth City and areas to the east. It carries external traffic destined for Elizabeth City and through beach traffic.

Ward Street is part of a system that carries travelers north and south.

Water Street (from Elizabeth Street to Burgess Street) carries traffic between the CBD and the northern part of the city.

Weeksville Road carries travelers between Elizabeth City and Weeksville. It is the primary facility serving areas south of Elizabeth City.

Crosstown Facilities

Crosstown facilities provide for travel across and through the central area. The following existing streets comprise the crosstown facilities in the Elizabeth City Planning Area:

Water Street (from Elizabeth St. to Southern Ave.),
Ehringhaus Street (from Road St. to Southern Ave.),
Road Street (from Elizabeth St. to Ehringhaus St.), and
Elizabeth Street (from Road St. to Water St.) function as crosstown streets around the CBD. They move traffic between radial thoroughfares for distribution throughout the area.

Loops

A loop facility is intended to handle traffic between outlying areas and act as a connector between radials. The following existing and proposed streets comprise the loops in Elizabeth City Planning Area:

Creek Road including the Proposed Extensions will provide a loop system for the western part of the city. It will provide an excellent connection between Halstead Boulevard and U.S. 17.

Halstead Boulevard is the primary loop for the southern part of the area. It connects major radials with each other and with U.S. 17.

Perkins Lane, Selby Road, Trinkaloe Road and the proposed Selby Road Extensions will carry circumferential travel in the outlying southern areas, thus making travel more direct and reducing congestion on Halstead Boulevard.

Simpson Ditch Road will function as a loop in the southern part of the Planning Area

Minor Thoroughfares

The following roads will function as minor thoroughfares primarily for local travel:

Brooks Avenue
Church Street
Colonial Avenue
Edgewood Drive
Fairfax Avenue
Forest Park Road
Griffin Street
Main Street
Main St. Ext. from Hughes Blvd. to Prop. Elizabeth St. Ext.
Park Drive
Parkview Drive
Peartree Road
Raleigh Street
Riverside Avenue
River Road
Shepherd Street
Walker Avenue including proposed extension

VIII. IMPLEMENTATION OF THE PLAN

When developing a thoroughfare plan, existing and future deficiencies in the transportation system are found and a strategy is devised to solve these problems by improving existing facilities and/or constructing new ones. Once this is done the plan must be implemented. Methods used to implement the thoroughfare plan as well as funding sources are discussed in this chapter.

State and Municipal Adoption of the Thoroughfare Plan

Chapter 136, Article 3A, Section 136-66.2 of the General Statutes of North Carolina provides that after development of a thoroughfare plan, the plan may be adopted by the governing body of the municipality and by the Department of Transportation to serve as the basis for future street and highway improvements. The General Statutes also require that, as part of the plan, the governing body of the municipality and Department of Transportation reach agreement on responsibilities for existing and proposed streets and highways included in the plan. Facilities which are designated a State responsibility will be constructed and maintained by the Division of Highways. Facilities which are designated a municipal responsibility will be constructed and maintained by the municipality.

After mutual plan adoption, the Department of Transportation will initiate negotiations leading to determining which of the existing and proposed thoroughfares will be a Department responsibility and which will be a municipal responsibility. Chapter 136, Article 3A, Section 136-66.1 of the General Statues provides guidance in the delineation of responsibilities. In summary, these statutes provide that the Department of Transportation shall be responsible for those facilities which serve volumes of through traffic and traffic from outside the area to major business, industrial, governmental, and institutional destinations located inside the municipality. The municipality is responsible for those facilities which serve primarily internal travel.

Thoroughfare plan adoption enables other planning tools such as subdivision regulations, zoning ordinances, future street line ordinances, and development reviews to be used to assist in plan implementation and thus minimize public cost and land use disruption.

Methods Used to Protect Adopted Thoroughfare Plan

Subdivision Regulations

Subdivision regulations are locally adopted laws governing the process of converting raw land into building

sites. From the planner's view, subdivision regulations are important at two distinct levels. First, they enable the planner to coordinate the otherwise unrelated plans of many individual developers. This process assures that provision is made for land development elements such as roadway right-of-way, parks, school sites, water lines, and so forth. Second, they enable the planner to control the internal design of each new subdivision so that its pattern of streets, lots, and other facilities will be safe, pleasant, and economical to maintain.

In practice, subdivision regulations can provide some very positive benefits such as requiring portions of major streets to be constructed in accordance with the thoroughfare plan, or requiring subdividers to provide for the dedication and/or reservation of right-of-way in advance of construction. These practices reduce the overall cost of the plan by having some costs borne by developers.

Zoning Ordinances

Zoning is probably the single most commonly used legal device available for implementing a community's land-use plan. To paraphrase the U.S. Department of Commerce 1924 Standard Zoning Enabling Act, on which most present-day legislation is based, zoning may be defined as the division of a municipality (or other governmental unit) into districts, and the regulation within the districts of:

1. the height and bulk of buildings and other structures,
2. the area of a lot that may be occupied and the size of required open spaces,
3. the density of population, and
4. the use of buildings and land for trade, industry, residence, or other purposes.

Future Street Line Ordinances

This ordinance is a particular benefit where widening of a street will be necessary at some time in the future. A municipality with legislative approval may amend its charter to be empowered to adopt future street line ordinances. Through a metes-and-bounds description of a street's future right-of-way requirements, the municipality may prohibit new construction or reconstruction of structures within the future right-of-way. This approach requires specific design of the facility and would usually require surveys and public hearings to allow affected property owners knowledge of what will occur.

Development Reviews

Driveway access to a State maintained street or highway

is reviewed by the District Engineer's office and by the Traffic Engineering Branch of the North Carolina Department of Transportation prior to access being allowed. Any development expected to generate large volumes of traffic (i.e. shopping centers, fast food restaurants, large industries, etc.) may be comprehensively studied by staff from the Traffic Engineering Branch, Statewide Planning Branch, and Roadway Design Unit of NCDOT. If done at an early stage, it is often possible to significantly improve the development's accessibility at minimal expense. Since the municipality is the first point of contact for developers, it is important that the municipality advise them of this review requirement and cooperate in the review process.

Funding Sources

Capital Improvement Program

A Capital Improvement Program, with respect to transportation, is a long range plan for the spending of money on street improvements, acquisition of rights-of-way and other improvements within the bounds of projected revenues. Municipal funds should be available for construction of street improvements which are a municipal responsibility; right-of-way cost sharing on facilities designated a Division of Highways responsibility; and advance purchase of right-of-way where such action is warranted.

Transportation Improvement Program

North Carolina's Transportation Improvement Program (TIP) is a document which lists all major construction projects the Department of Transportation plans for the next seven years. Similar to local Capital Improvement Program projects, TIP projects are matched with projected funding sources. Each year when the TIP is updated, completed projects are removed, programed projects are advanced, and new projects are added.

During annual TIP public hearings, municipalities may request that specific projects be included in the TIP. A Board of Transportation member reviews all of the project requests in a particular area of the state. Based on the technical feasibility, need, and available funding, the Board member decides which projects will be included in the TIP. In addition to highway construction and widening, TIP funds are available for bridge replacement projects, highway safety projects, public transit projects, railroad projects, and bicycle projects.

Industrial Access Funds

If an industry wishes to develop property that does not

have access to a state maintained highway and certain economic conditions are met, then funds may be made available for construction of an access road.

Small Urban Funds

Small Urban funds are annual discretionary funds made available to municipalities with qualifying projects. Requests for Small Urban Fund assistance should be directed to the appropriate Board of Transportation member and Division Engineer.

Other Funding Sources

1. Assess user impact fees to fund transportation projects. These fees, called "facility fees" in the legislation, are to be based upon "reasonable and uniform considerations of capital costs to be incurred by the city or town as a result of new construction. The facility fee must bear a direct relationship to additional or expanded public capital costs of the community service facilities to be rendered for the inhabitants, occupants of the new construction, or those associated with the development process".

2. Enact a bond issue to fund street improvements.

3. Consider the possibility of specific projects qualifying for federal demonstration project funds.

4. Adopt a collector street plan that would assess the buyers of property or property owners for street improvement.

5. Charge a special assessment for utilities; for example, increase water and sewer bills to cover the cost of street improvements.

IX. IMPROVEMENT PRIORITIES

The improvements shown in the Mutually Adopted Thoroughfare Plan and in the "Thoroughfare Plan Street Tabulations and Recommendations" found in Appendix D obviously cannot be undertaken all at once. The cost would be overwhelming and the need for many of the improvements is not immediate. In an effort to reflect the relative value of various improvements, an assessment has been made of the benefits that can be expected from each improvement. Comparison between the projected benefits and cost of each improvement is a useful tool in evaluating priorities. Results of the cost versus benefit analysis for the major unfunded improvements in the Mutually Adopted Thoroughfare Plan and in the "Thoroughfare Plan Street Tabulations and Recommendations" are shown in Table 3. This analysis is a tool that local decision makers may use to help guide them as they establish priorities for transportation improvements in the Elizabeth City area.

Priorities can be set by comparing the expected benefits that will result to the expected project costs. Three principal measures of benefits can be used: road user cost savings, increased economic development resulting from the improvement, and the environmental impact, both positive and negative, which might result.

Reduced road user costs should result from any roadway improvement, from a simple widening to the construction of a new roadway to relieve congested or unsafe conditions. Potential savings have been computed in terms of vehicle operating costs, travel time costs, and accident costs. The user benefits are computed as total dollar savings over a twenty five year period using data such as project length, traffic volumes, traffic speed, type of facility, and volume/capacity ratio.

The potential impact of a project on economic development is rated on a scale from 0 (none) to 1.00 (excellent). This rating predicts the amount of economic stimulation that the project would contribute to the area by providing access to developable land and reducing transportation costs. It is a subjective estimate based on knowledge of the proposed project, local development characteristics, and land development potential.

An environmental impact analysis considers the effect of a project on the physical, social/cultural, and economic environment. Table 1 lists the items that are typically considered when evaluating the impact of a project on the environment. Many of these are accounted for in evaluating the project with respect to road user cost savings, project cost, and economic development potential. It is extremely time consuming to gather complete and reliable data on all

the environmental factors that are listed in Table 1. Therefore, it is beyond the scope of work for a thoroughfare plan study to assign a rating for the environmental impact. However, some of the environmental impacts shown in Table 1 have been computed for the improvements on new location and can be found in Appendix C.

Table 1

Environmental Considerations

Physical Environment

- Air quality
- Water Resources
- Soils and Geology
- Wildlife
- Vegetation

Social and Cultural Environment

- Housing
- Neighborhoods
- Noise
- Educational Facilities
- Churches
- Parks and Recreational Facilities
- Public Health and Safety
- National Defense
- Aesthetics

Economic Environment

- Business
- Employment
- Economic Development
- Public Utilities
- Transportation Costs
- Capital Costs
- Operation and Maintenance Costs

Table 2	
Improvement Cost Estimates	
Improvement Description	Total Cost including R/W
U.S. 17 widening (from Church St. to bridge over Knobbs Creek)	$2,900,000
Selby Road Extension (from Oak Stump Rd. to existing Selby Rd and from Body Rd. to Peartree Rd.)	$3,100,000
Creek Rd Extension (from proposed Halstead Blvd. Connector to U.S. 17 including the widening of existing Creek Rd. from Main St. Extension to Pot of Gold Trail)	$6,700,000

Table 3					
Cost versus Benefits Analysis					
Improvement	Benefits (1000's)	Costs (1000's)	Length (km)	Net Benefits (1000's per km)	Econ. Dev. Potential
U.S. 17 Widening	$39,200	$2,900	2.78	$13,058	0.3
Selby Rd Extension	$20,500	$3,100	2.80	$6,214	0.5
Creek Rd Extension	$99,500	$6,700	4.67	$19,872	0.5

APPENDIX A
TECHNICAL INFORMATION ON TRAFFIC FORECASTING

TECHNICAL INFORMATION ON TRAFFIC FORECASTING

General Process Used in Development of Base Year (1995) Model

See Figure A-1 for the general process used in the development of the base year model.

Base Year Internal Trip Productions

This section discusses how average daily trip productions were estimated for the following categories: (1) trips produced by dwelling units, (2) trips produced by commercially owned heavy trucks, (3) trips produced by commercially owned cars, pick-up trucks, and vans, and (4) NHB Secondary trips.

A dwelling unit survey was performed in which the units were counted on a zonal basis and put into one of the following categories: excellent, above average, average, below average, and poor. The trips produced by dwelling units were computed by multiplying the trip generation rate for each category by the number of dwelling units in each category. The following are the generation rates used: 14.0 for excellent, 12.0 for above average, 10.0 for average, 8.0 for below average, and 6.0 for poor.

The number of commercially owned heavy trucks was determined on a zonal basis by surveying the businesses in each zone. The trips produced were computed by multiplying the number of trucks by 7.0.

The number of commercially owned cars, pick-up trucks, and vans was determined on a zonal basis by surveying the businesses in each zone. The trips produced were computed by multiplying the number of cars, pick-up trucks, and vans by 7.0.

The trips generated by the dwelling units and commercially owned vehicles discussed above are called internally generated trips. Included in the internally generated trips are both trips between internal zones (called internal-internal) and trips made by vehicles garaged inside the planning area but with destinations outside the planning area (called internal-external). Since internal-external trips are included in the external-internal trips, the number of internally generated trips was reduced by 12 percent so that the internal-external trips would not be double counted.

The number of adjusted internally generated trips produced by dwelling units was separated into three purposes: (1) home based work (HBW) trips, (2) home based other (HBO) trips, and (3) non-home based (NHB) trips. 25 percent was allocated to HBW, 51 percent was allocated to HBO, and 24 percent was allocated to NHB. The trips produced by

commercially owned vehicles are considered NHB trips.

The zonal trip productions input into the forecasting model for HBW and HBO were determined by multiplying the total number of zonal adjusted internally generated trips produced by dwelling units by 0.25 and 0.51, respectively. The zonal trip productions input into the forecasting model for NHB (dwelling units) were determined by distributing the total number of NHB (dwelling units) trips in the planning area to the zones based on each zone's relative attractiveness as determined by the NHB attraction equation. The zonal trip productions input into the forecasting model for NHB (commercial vehicles) were taken to be the zonal adjusted internally generated trips produced by commercial vehicles.

The remaining component of internal trips is NHB Secondary trips. These are trips that occur when vehicles garaged outside the planning area make trips that have both their origin and destination within the planning area. The number of trip productions input for NHB Secondary was 14,153. These trip productions were distributed to each zone based on the zone's relative attractiveness as determined by the NHB attraction equation.

THE FOLLOWING ARE EXAMPLE CALCULATIONS ILLUSTRATING HOW BASE YEAR INTERNAL TRIP PRODUCTIONS WERE CALCULATED.

NOTE: The following values are used in these calculations:

Total number of adjusted internally generated trips produced by dwelling units for all zones = 80,516

NHB unadjusted attractions for zone 1 = 1094

Total number of NHB unadjusted attractions for all zones = 32,863

1) Determine adjusted internally generated trips produced by the dwelling units in zone 1:

$$X = 0.88 \times [\ 14(0) + 12(9) + 10(20) + 8(13) + 6(0)\ ]$$

$$X = 363$$

2) Determine adjusted internally generated trips produced by commercial vehicles in zone 1:

$$X = 0.88\ [\ 14(7) + 29(7)\ ] = 265$$

3) Determine HBW productions for input into forecasting model for zone 1:

$$X = 363 \times 0.25 = 91$$

4) Determine HBO productions for input into forecasting model for zone 1:

X = 363 X 0.51 = 185

5) Determine NHB (dwelling units) productions for input into forecasting model for zone 1:

X = 0.24 X 80,516 X 1094/32863 = 643

6) Determine NHB (commercial vehicles) productions for input into forecasting model for zone 1:

X = 265

7) Determine NHB (secondary) productions for input into forecasting model for zone 1:

X = 14,153 X 1094/32863 = 471

Base Year External-Internal Trip Productions

The number of External-Internal Trip Productions was determined by subtracting the through trip traffic volume from the total traffic volume at each external station.

Base Year Trip Attractions

The HBW unadjusted attractions were taken to be the total employment within the zone. The unadjusted attractions for HBO, NHB, and external-internal purposes were computed using attraction equations. The attraction equations were borrowed from the 1978 Elizabeth City Thoroughfare Plan Report and modified as necessary to make the model adequately duplicate existing traffic volumes. The final equations are as follows:

HBO, NHB

$$Y = 26 + 0.45X1 + 1.44X2 + 7.47X3 + 1.05X4 + 1.96X5 + 0.65X6 + 0.65X7 + 0.66X8$$

EXTERNAL - INTERNAL

$$Y = 26 + 0.45X1 + 1.44X2 + 7.47X3 + 1.05X4 + 1.96X5 + 0.65X6 + 0.65X7 + 1.0X8$$

WHERE: Y = Unadjusted attractions for zone N
X1 = Number of employees working for businesses in X1 category in zone N
X2 = Number of employees working for businesses in X2 category in zone N
X3 = Number of employees working for businesses in X3

category in zone N
X4 = Number of employees working for businesses in X4 category in zone N
X5 = Number of employees working for businesses in X5 category in zone N
X6 = Number of Coast Guard Base employees in zone N
X7 = Number of Pasquotank hospital employees in zone N
X8 = Number of housing units in zone N

The *Standard Industrial Classification Manual - 1987* was used to classify businesses into the categories X1, X2, X3, X4, and X5. The following indicates which major groups were included in each employment category:

X1 = Major groups 1, 2, 7-10, 12-17, 20-49 except post offices, veterinarian offices, airports, marinas, and travel agencies

X2 = Major groups 50-54, 56, 57, 59 plus automotive dealers

X3 = Major group 58 plus post offices and gasoline service stations

X4 = Major groups 60-65, 67, 91-97

X5 = Major groups 70, 72, 73, 75, 76, 78-84, 86-89, 99, plus veterinarian offices, airports, marinas, and travel agencies

The unadjusted zonal attractions were adjusted so that the total attractions equalled the total productions for each trip purpose. This adjustment was made by multiplying each of the unadjusted zonal attractions by the ratio of total productions to total unadjusted attractions for the appropriate trip purpose.

THE FOLLOWING IS AN EXAMPLE CALCULATION ILLUSTRATING HOW UNADJUSTED ZONAL ATTRACTIONS WERE ADJUSTED.

NOTE: The following values are used in these calculations:

Unadjusted HBW Attractions for Zone 1 = 534

Unadjusted HBW Attractions for Planning Area = 12,872

HBW Productions for Planning Area = 20,129

1) Determine HBW Attractions for input into forcasting model for Zone 1:

$X = 534 \times 20{,}129/12{,}872 = 835$

Base Year Trip Distribution

A gravity model trip distribution program was used to distribute internal trips (HBW, HBO, NHB) and EXT-INT trips.

Base Year Through Trips

An External Origin and Destination Traffic Survey was performed in the Elizabeth City area in 1973. Data from the survey was used in conjunction with traffic counts taken in 1995 at 16 locations around the planning area boundary to estimate through trips.

Base Year Model Accuracy Checks

The model's ability to simulate traffic patterns in the area was checked by a comparison of assigned traffic to actual counts taken by the North Carolina Department of Transportation. Two screenlines were set up for the area and are shown on Figure 3. The final results of the screenline calibration are shown below.

Screenline	Actual Count	Model's Count	Percentage
A	76,092	81,845	107.6
B	57,976	54,815	94.5

In addition to screenline checks, link comparisons were made on much of the network. The results of these two accuracy checks were considered within acceptable limits for the purpose of transportation planning.

Development of 2010 and 2020 Models

The general process used for the development of the base year model was also used for the development of the 2010 and 2020 Models. All factors used to produce, attract, distribute, and assign traffic were assumed to remain constant from 1995 to 2020. The numbers that changed were the housing and employment data that was used to predict productions and attractions for each zone, the number of NHB secondary trips, the number of trips produced by the external stations, and the through trips.

The housing and employment data was adjusted to reflect the projected growth in the area. These adjustments were determined by a joint effort of the N.C.D.O.T. and the Elizabeth City Planning Department.

The number of NHB secondary trips input was 18,399 in 2010 and 22,738 in 2020. The number of trips produced by the external stations and the number of through trips was estimated using trendline analysis and land use forecasts

near the planning area boundary.

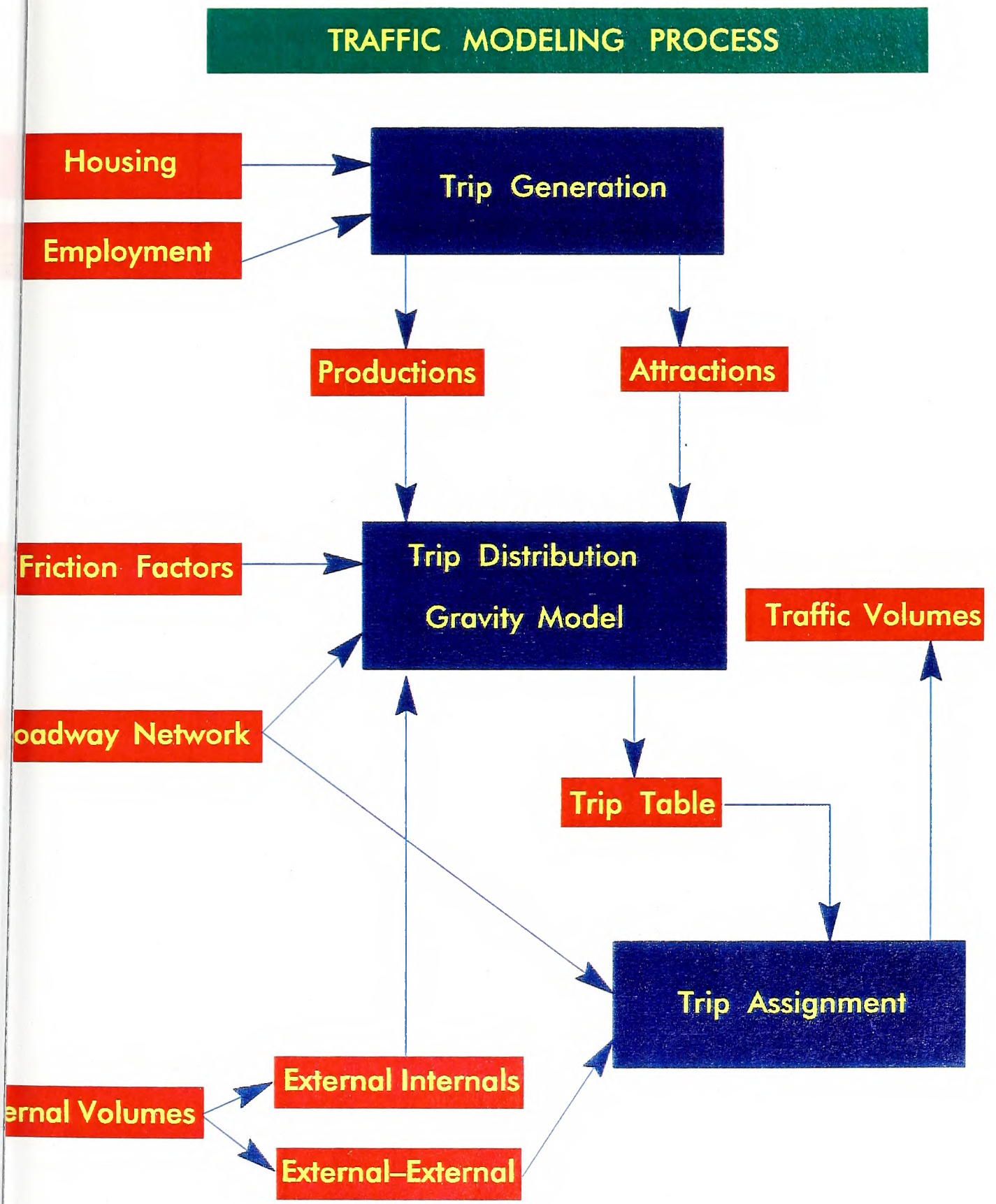
TRAFFIC MODELING PROCESS
Housing
Employment
Trip Generation
Productions
Attractions
Friction Factors
Trip Distribution
Gravity Model
Traffic Volumes
oadway Network
Trip Table
Trip Assignment
External Internals
ernal Volumes
External–External

FIGURE A – 1

TABLE A-1 - 1995 PLANNING AREA DWELLING UNIT SURVEY

ZONE	DWELLING UNIT CLASSIFICATION					TOTAL
	EXCELLENT	ABOVE AVERAGE	AVERAGE	BELOW AVERAGE	POOR	
01	0	9	20	13	0	42
02	0	0	3	10	6	19
03	1	2	8	20	24	55
04	0	3	6	38	34	81
05	4	35	128	176	70	413
06	0	1	9	30	18	58
07	0	0	11	619	20	650
08	0	3	30	127	73	233
09	7	52	246	122	9	436
10	1	17	172	182	18	390
11	0	6	124	129	73	332
12	0	10	261	69	2	342
13	0	8	61	184	32	285
14	0	2	15	9	1	27
15	0	3	9	7	2	21
16	0	0	118	51	13	182
17	36	56	8	0	0	100
18	0	2	16	0	0	18
19	0	0	2	0	0	2
20	26	87	95	20	0	228
21	12	71	189	72	9	353
22	0	0	0	0	0	0
23	0	0	0	0	2	2
24	0	2	25	105	225	357
25	0	2	8	7	2	19
26	0	1	23	61	144	229
27	9	2	5	103	214	333
28	0	48	227	128	2	405
29	0	0	10	45	73	128
30	0	1	369	2	0	372
31	0	8	36	9	0	53
32	0	56	142	140	13	351
33	0	0	146	76	0	222
34	0	0	6	2	0	8
35	0	3	76	214	9	302
36	0	2	108	26	1	137
37	0	9	298	230	12	549
38	0	5	78	49	0	132
39	0	10	226	20	0	256
40	0	0	31	34	16	81
41	0	0	26	25	17	68
42	0	2	97	76	2	177
43	0	8	36	35	3	82
44	1	84	249	83	3	420
45	0	0	70	38	2	110
46	0	0	23	28	5	56
47	0	14	253	27	21	315
48	0	3	145	101	3	252
49	0	3	126	33	28	190
50	0	6	105	243	1	355
TOTAL	97	636	4475	3818	1202	10,228

TABLE A-2 - 1995 PLANNING AREA EMPLOYMENT SURVEY

ZONE	EMPLOYMENT CATEGORY							EMPLOYMENT TOTALS	COMMERCIAL VEHICLES	
	X1	X2	X3	X4	X5	COAST GUARD BASE	HOSPITAL		HEAVY TRUCK	CAR, VAN, PU
01	2	203	37	112	180			534	14	29
02	5	54	44	20	125			248	2	32
03	20	9	1	487	321			838	7	104
04	14	54	15	60	222			365	10	56
05	0	0	0	0	151			151	0	2
06	4	52	178	17	54			305	2	25
07	0	0	0	0	65			65	0	0
08	0	2	0	0	50			52	0	1
09	0	3	1	3	25			32	0	1
10	0	0	0	0	62			62	0	4
11	0	0	2	0	37			39	3	22
12	190	19	36	20	497			762	15	61
13	0	0	0	28	29			57	0	0
14	0	0	0	0	0			0	0	0
15	40	0	0	0	4			44	11	13
16	4	2	0	0	10			16	3	9
17	0	0	0	0	0			0	0	0
18	0	0	12	0	13	1100		1125	7	31
19	0	0	0	0	1			1	0	0
20	109	0	0	0	3			112	10	33
21	10	20	34	5	25			94	3	23
22	87	60	0	0	0			147	5	14
23	21	4	18	0	82			125	12	10
24	0	9	16	0	91			116	6	12
25	58	65	2	0	45			170	16	37
26	17	1	0	9	6			33	1	6
27	0	71	8	17	83			179	6	13
28	0	3	4	1	15			23	0	0
29	44	184	134	65	93			520	25	54
30	0	37	0	38	161			236	9	12
31	4	0	0	0	0			4	2	2
32	31	0	7	0	27			65	26	13
33	0	2	0	0	108			110	0	0
34	0	451	236	45	66			798	3	34
35	120	90	202	74	209			695	51	203
36	43	703	113	29	271			1159	19	32
37	306	100	2	21	234			663	100	140
38	34	15	0	0	7			56	15	18
39	56	9	0	0	25			90	4	39
40	15	23	8	0	3			49	3	25
41	308	3	0	0	41			352	29	17
42	0	18	21	4	738(1)		775	1556	4	22
43	22	27	31	55	98			233	12	43
44	10	182	70	51	104			417	9	57
45	4	14	5	0	10			33	14	26
46	0	4	0	0	15			19	0	4
47	1	0	0	0	26			27	0	1
48	0	6	0	0	39			45	0	7
49	50	26	0	13	30			119	12	48
50	1	0	13	1	66			81	1	3
TOTAL	1630	2525	1250	1175	4567	1100	775	13,022	471	1338

See page A-12 for notes

TABLE A-3 - 2020 PLANNING AREA DWELLING UNIT PROJECTIONS

ZONE	DWELLING UNIT CLASSIFICATION					TOTAL
	EXCELLENT	ABOVE AVERAGE	AVERAGE	BELOW AVERAGE	POOR	
01	0	34	20	13	0	67
02	0	15	3	10	6	34
03	1	2	8	20	24	55
04	0	3	6	38	34	81
05	4	35	128	176	70	413
06	0	1	9	30	18	58
07	0	0	11	619	20	650
08	0	3	30	127	73	233
09	7	52	246	122	9	436
10	1	17	172	182	18	390
11	0	6	124	129	73	332
12	0	10	261	69	2	342
13	0	8	101	259	32	400
14	0	57	40	9	1	107
15	0	23	59	7	2	91
16	0	20	148	151	13	332
17	66	196	68	0	0	330
18	25	102	51	0	0	178
19	0	0	2	0	0	2
20	66	207	165	20	0	458
21	42	151	309	72	9	583
22	0	0	0	0	0	0
23	0	0	0	0	2	2
24	0	2	25	105	225	357
25	0	2	8	7	2	19
26	0	1	23	61	144	229
27	9	2	5	103	214	333
28	0	48	227	128	2	405
29	0	0	10	45	73	128
30	0	1	369	2	0	372
31	0	18	86	9	0	113
32	0	66	292	155	13	526
33	0	0	146	76	0	222
34	0	0	6	2	0	8
35	0	3	76	214	9	302
36	0	2	108	26	1	137
37	0	39	498	245	12	794
38	0(2)	30(2)	278(2)	64(2)	0(2)	372(2)
39	0	10	226	20	0	256
40	0	0	31	34	16	81
41	0	0	26	25	17	68
42	0	2	97	76	2	177
43	0	8	36	35	3	82
44	31	199	399	83	3	715
45	20	50	110	38	2	220
46	0	30	123	28	5	186
47	0	34	328	42	21	425
48	0(2)	23(2)	285(2)	101(2)	3(2)	412(2)
49	20	78	201	33	28	360
50	0	61	206	258	1	526
TOTAL	292	1651	6186	4068	1202	13,399

See page A-12 for notes

TABLE A-4 - 2020 PLANNING AREA EMPLOYMENT PROJECTIONS

ZONE	EMPLOYMENT CATEGORY							EMPLOYMENT TOTALS	COMMERCIAL VEHICLES	
	X1	X2	X3	X4	X5	COAST GUARD BASE	HOSPITAL		HEAVY TRUCK	CAR, VAN, PU
01	2	203	37	112	180			534	14	29
02	5	54	44	20	125			248	2	32
03	20	9	1	487	321			838	7	104
04	14	54	15	60	222			365	10	56
05	0	0	0	0	151			151	0	2
06	4	52	178	17	54			305	2	25
07	0	0	0	0	65			65	0	0
08	0	2	0	0	50			52	0	1
09	0	3	1	3	25			32	0	1
10	0	0	0	0	62			62	0	4
11	0	0	2	0	37			39	3	22
12	290	19	71	120	531			1031	28	90
13	0	0	0	28	29			57	0	0
14	0	0	0	0	0			0	0	0
15	40	0	0	0	4			44	11	13
16	44	2	20	20	24			110	7	20
17	0	0	0	0	210			210	7	35
18	0	0	12	0	13	1100		1125	7	31
19	0	0	0	0	1			1	0	0
20	109	0	0	0	3			112	10	33
21	10	20	34	5	25			94	3	23
22	122	60	0	0	14			196	9	23
23	21	4	18	0	82			125	12	10
24	0	9	16	0	91			116	6	12
25	83	65	2	20	59			229	19	45
26	17	1	0	9	6			33	1	6
27	0	71	8	17	83			179	6	13
28	0	3	4	1	15			23	0	0
29	44	184	134	65	93			520	25	54
30	0	37	0	38	161			236	9	12
31	4	0	0	0	0			4	2	2
32	31	0	7	0	27			65	26	13
33	0	2	0	0	108			110	0	0
34	0	451	236	45	66			798	3	34
35	120	160	232	114	284			910	58	228
36	43	703	113	29	271			1159	19	32
37	406	160	102	51	282			1001	116	178
38	114(2)	90(2)	200(2)	88(2)	55(2)			547(2)	32(2)	57(2)
39	56	9	22	10	35			132	4	42
40	15	23	8	0	3			49	3	25
41	388	13	10	10	41			462	39	33
42	0	38	61	84	786(3)		775	1744	8	37
43	22	27	31	55	98			233	12	43
44	10	232	110	91	142			585	13	73
45	4	14	25	20	24			87	14	30
46	0	4	0	0	15			19	0	4
47	1	20	40	20	40			121	1	8
48	70(2)	66(2)	130(2)	60(2)	87(2)			413(2)	14(2)	41(2)
49	50	26	0	13	30			119	12	48
50	81	70	73	301	107			632	16	50
TOTAL	2240	2960	1997	2013	5237	1100	775	16,322	590	1674

See page A-12 for notes

NOTES

(1) - This number was changed to 588 in the forecasting process to account for a large number of part time employees at the College of the Albemarle.

(2) - To account for development that would occur around the interchanges where the two proposed connectors access the proposed bypass, zones 51 and 52 were created. Part of the housing and employment growth that is projected to occur in zone 38 was shifted to zone 52 and part of the growth that is projected to occur in zone 48 was shifted to zone 51. The values used in the forecasting process for zones 38, 48, 51, and 52 are shown below.

ZONE	DWELLING UNIT CLASSIFICATION					TOTAL
	EXCELLENT	ABOVE AVERAGE	AVERAGE	BELOW AVERAGE	POOR	
38	0	11	128	53	0	192
48	0	8	180	101	3	292
51	0	15	105	0	0	120
52	0	19	150	11	0	180

ZONE	EMPLOYMENT TYPE							EMPLOY MENT TOTALS	COMMERCIAL VEHICLES	
	INDUSTIAL	WHOLESALE & RETAIL SALES	HIGHWAY RETAIL	OFFICE & INSTITUT	SERVICE	COAST GUARD BASE	HOSPITAL		HEAVY TRUCK	CAR, VAN, PU
38	54	34	50	22	19			179	18	27
48	17	21	32	15	51			136	3	15
51	53	45	98	45	36			277	11	26
52	60	56	150	66	36			368	14	30

(3) - This number was changed to 636 in the forecasting process to account for a large number of part time employees at the College of the Albemarle.

TABLE A-5
FRICTION FACTORS FOR THE ELIZABETH CITY MODEL

TIME INTERVAL	HBW	HBO	NHB	EXT-INT
1	8181	12000	10000	400000
2	11119	22425	15021	200000
3	13628	19971	16041	100000
4	15258	17018	15964	39459
5	15810	13999	14975	12690
6	15357	11217	13394	6117
7	14167	8832	11553	4057
8	12574	6895	9721	3399
9	10876	5385	8069	3304
10	9288	4245	6685	3419
11	7933	3407	5589	3459
12	6864	2810	4772	3141
13	6097	2402	4207	2350
14	5630	2148	3874	1330
15	5476	2026	3769	523
16	5300	1900	3600	131
17	5200	1800	3500	19
18	5100	1700	3400	2
19	5000	1600	3300	0
20	4900	1500	3200	0
21	4800	1400	3100	0
22	4700	1300	3000	0

TABLE A-6

1995, 2010, AND 2020 EXTERNAL TRAVEL

(Average Daily Travel in Vehicles per day)

EXTERNAL STATION NUMBER	STATION LOCATION	1995			2010			2020		
		TOTAL	THRU*	EXT-INT	TOTAL	THRU*	EXT-INT	TOTAL	THRU*	EXT-INT
66	SR 1128 - BAYSIDE RD	130	0	130	175	0	175	213	0	213
67	NC 34 - WEEKSVILLE RD	2300	600	1700	2530	828	1702	2750	908	1842
68	SR 1169 - PITTS CHAPEL RD	1435	62	1373	2584	120	2464	3825	182	3643
69	SR 1101	974	34	940	1071	42	1029	1179	48	1131
70	SR 1135	439	34	405	483	42	441	531	48	483
71	SR 1139 - BODY RD	1397	104	1293	1880	162	1718	2292	200	2092
72	SR 1140 - HALLS CREEK RD	1746	170	1576	2350	230	2120	2864	278	2586
73	SR 1197 - OLD US 17	3279	170	3109	4413	240	4173	5380	292	5088
74	US 17	11585	3432	8153	15592	4578	11014	19006	5610	13396
75	SR 1419 - OKISKO RD	310	10	300	417	20	397	509	24	485
76	SR 1144 - FOREMAN BUNDY RD	1108	30	1078	1491	50	1441	1818	60	1758
77	US 17/158	10616	3744	6872	16539	6732	9807	22228	8988	13240
78	SR 1416 - NORTHSIDE DR.	1110	60	1050	1494	80	1414	1821	98	1723
79	NC 343	2846	1000	1846	3830	1200	2630	4669	1464	3205
80	US 158/NC34	8772	2470	6302	13666	5088	8578	18367	6726	11641
81	NC 343	1506	700	806	2027	900	1127	2471	1098	1373

* THRU TRIP ENDS

APPENDIX B
PUBLIC INVOLVEMENT

GOALS AND OBJECTIVES SURVEY

During the thoroughfare planning process, input is solicited from area citizens. One facet of the citizen input in Elizabeth City was a Goals and Objectives survey. The survey shown on pages B-2 and B-3 was mailed to a portion of the citizens in Elizabeth City and the surrounding area.

It was decided that the best way to get a large number of responses without spending a great deal of money was to include the survey in the utility bills mailed by the city. There are approximately 10,000 utility bills sent to customers in Elizabeth City and the surrounding area. Since a response rate of approximately 20 percent was anticipated, it was decided that sending the survey to only one of the four billing cycles would provide an adequate number of responses. The fourth billing cycle, which includes approximately 2700 customers, was selected since it was felt to contain the most diverse racial, age, and economic mix of the four billing cycles. The fourth billing cycle covers the southeastern part of the city and has the following approximate boundaries: Ehringhaus St. to the north, Cardwell Dr. to the west, Halstead Blvd. to the south, and the Pasquotank River to the east.

There were 452 surveys returned and the results are compiled on pages B-4, B-5, and B-6.

The North Carolina Department of Transportation in cooperation with the Elizabeth City Planning Department is in the process of updating the Thoroughfare Plan for Elizabeth City. The following is a survey that will help gauge what the citizens in and around Elizabeth City feel about transportation issues.

Please take a few minutes to complete the questionnaire and return the survey with your utility bill. If you have any questions, please contact Van Argabright at 919-733-4705.

A. How important are each of these issues to you? (Please check the appropriate box)

	Not Important	Somewhat Important	Important	Very Important
Construction of roads to promote new industries and jobs				
Preservation of historic buildings and sites				
Reduction of air and noise pollution				
Preservation of land for future roads, greenways, and sidewalks				
Reducing traffic accidents				
Connecting existing streets				
Public bus service				
Construction cost of transportation system				
Improving the timing and coordination of traffic signals				
Protecting natural areas and open spaces				
Discouraging use of automobiles				
Protecting homes and businesses along existing roads				
Increasing capacity of streets to adequately handle traffic				
Developing new roads to relieve congestion on existing streets				
Building greenways, sidewalks, and bike paths				
Providing transportation for the elderly and disabled				

B. What level of congestion will you accept and live with daily before improvements should be made? (Please check one)

___ No delay or congestion at any time of day. Free flowing traffic.

___ Little delay during rush hours. Wait of more that one red light occurs occasionally.

___ Some congestion during rush hours. Frequent wait of more than one red light. Driver would consider changing route to avoid congested area.

___ Moderate congestion even in non-rush hours. Short traffic delays during much of the day.

___ Heavy congestion. Long traffic delays during much of the day.

___ Extreme congestion. Stop and go traffic throughout the day. Gridlock conditions in many areas.

C. If additional money is needed to fund transportation projects, would you be willing to vote for: (please CIRCLE your answer)

A gasoline tax increase?	Yes	No
Charging developers impact fees to develop properties?	Yes	No
A local bond referendum?	Yes	No
New/additional parking fees?	Yes	No

D. Would you use carpooling if a system was available that matched you with other riders with whom you could easily share a ride? Yes No

E. How many persons in your household who are 16 years or older own a bicycle?
_____

F. Statistical Information

How many persons live in your household? _____

How many of these persons are 16 years old or older? _____

Are you: ____black; ____white; ____other?

Are you: ____male; ____female?

How do members of your household get to work? (Check the **one** most used)
____drive own car or truck; ____ride in someone else's car; ____ride in bus;
____take taxi; ____ride motorcycle; ____ride bicycle; ____walk; ____work at home.

The address this survey was mailed to is a ____residence; ____business.

You currently reside in ____Elizabeth City; ____Pasquotank County; ____Other.

What is your age? _____

RESULTS OF 1995 TRANSPORTATION SURVEY IN ELIZABETH CITY

A. How important are each of these issues to you? (Please check the appropriate box)

N.R. means that the person either did not respond to the question or gave two anwsers where one was asked for.

	Not Important	Somewhat Important	Important	Very Important	N.R.
Construction of roads to promote new industries and jobs	21	79	133	209	10
Preservation of historic buildings and sites	37	124	150	129	12
Reduction of air and noise pollution	13	70	148	205	16
Preservation of land for future roads, greenways, and sidewalks	12	91	183	153	13
Reducing traffic accidents	7	16	108	311	10
Connecting existing streets	86	109	151	76	30
Public bus service	118	98	102	119	15
Construction cost of transportation system	49	92	139	128	44
Improving the timing and coordination of traffic signals	29	81	146	185	11
Protecting natural areas and open spaces	22	96	171	152	11
Discouraging use of automobiles	176	143	64	36	33
Protecting homes and businesses along existing roads	24	111	156	149	12
Increasing capacity of streets to adequately handle traffic	28	71	188	149	16
Developing new roads to relieve congestion on existing streets	39	97	166	132	18
Building greenways, sidewalks, and bike paths	49	128	124	137	14
Providing transportation for the elderly and disabled	14	67	152	215	4

B. What level of congestion will you accept and live with daily before improvements should be made? (Please check one)

36-No delay or congestion at any time of day. Free flowing traffic.

134-Little delay during rush hours. Wait of more that one red light occurs occasionally.

144-Some congestion during rush hours. Frequent wait of more than one red light. Driver would consider changing route to avoid congested area.

64-Moderate congestion even in non-rush hours. Short traffic delays during much of the day.

10-Heavy congestion. Long traffic delays during much of the day.

2-Extreme congestion. Stop and go traffic throughout the day. Gridlock conditions in many areas.

62-N.R.

C. If additional money is needed to fund transportation projects, would you be willing to vote for: (please CIRCLE your answer)

A gasoline tax increase?	Yes-81	No-212	N.R.-159
Charging developers impact fees to develop properties?	Yes-274	No-62	N.R.-116
A local bond referendum?	Yes-182	No-122	N.R.-148
New/additional parking fees?	Yes-137	No-154	N.R.-161

D. Would you use carpooling if a system was available that matched you with other riders with whom you could easily share a ride? Yes-219 No-152 N.R.-81

E. How many persons in your household who are 16 years or older own a bicycle?
None-198 One-88 Two-107 Three-14 Four-7 Five-1 Six-1 N.R.-36

F. Statistical Information

How many persons live in your household? None-2 One-125 Two-168 Three-64 Four-47 Five-16 Six-7 Seven-1 Eight-1 Twenty-1 N.R.-20

How many of these persons are 16 years old or older? None-30 One-115 Two-207 Three-46 Four-17 Five-3 Six-1 Twenty-1 N.R.-32

Are you: black-102; white-300; other-15; N.R.-35

Are you: male-192; female-229; N.R.-31

How do members of your household get to work? (Check the **one** most used)
281-drive own car or truck; 15-ride in someone else's car; 1-ride in bus;
7-take taxi; 4-ride motorcycle; 0-ride bicycle; 0-walk; 29-work at home.
N.R.-115

The address this survey was mailed to is a residence-415; business-21; N.R.-16

You currently reside in Elizabeth City-418; Pasquotank Co.-15; 6-Other; N.R.-13

What is your age? (18-29)-30 (30-39)-54 (40-49)-71 (50-59)-60 (60-69)-84
(70-79)-86 (80-89)-28 (90-100)-2 N.R.-37

PUBLIC INVOLVEMENT MEETINGS

1) On November 14, 1995, preliminary findings were presented to the Elizabeth City Planning Commission.

2) On January 22, 1996 preliminary findings were presented to the Elizabeth City City Council.

3) On January 29, 1996, a public hearing was held to present preliminary findings and solicit public input. The following is a summary of the major concerns raised:

   A) Business people on Water Street spoke out against the proposal to widen Water Street and remove parking. As part of the discussion, someone suggested that if the intersection of Water St. and Elizabeth St. were modified, much of the congestion would be alleviated. In addition, many people suggested that one way streets should be explored as a possible solution in lieu of widening.

   B) Several people stated that there is poor signal operation and coordination in the downtown area.

   C) Residents of the Oxford Heights Neighborhood expressed concern about an alternative for the Halstead Blvd. connector that went through their neighborhood.

4) On April 15, 1996, the Recommended Thoroughfare Plan was presented to the Elizabeth City City Council.

5) On April 23, 1996, a public hearing was held to present the Recommended Thoroughfare Plan and solicit public input. The major concerns raised were from residents who owned property in the vicinity of proposed new roads. Their concerns included increased noise on their property and the effect the roads would have on usage of their property.

6) On June 17, 1996, the Recommended Thoroughfare Plan was presented to the Elizabeth City City Council for adoption.

NEWSPAPER ARTICLES

Pages B-9 thru B-26 are copies of newspaper articles that were published regarding the Thoroughfare Plan update.

THE DAILY ADVANCE 1/23/96

City thoroughfare updates proposed

■ Public hearing will be held Monday at 7 p.m. in county courthouse

By TOM LANGHORNE
Staff writer

Elected officials got their first formal look Monday night at proposed Elizabeth City Thoroughfare Plan updates that would affect traffic flow in the city for decades to come.

Armed with a set of maps, state Department of Transportation Project Engineer R. Van Argabright told city council that the department and city planning staff are trying to find proposed solutions to current and future road problems in the area.

"A thoroughfare plan is a document that specifies the transportation improvements necessary to accommodate future traffic growth," he said. "It's our first step in the planning process of getting a road built... This is a 25-year plan.

"Most of the roads that are over-capacity right now are around 25-80 percent over-capacity, so you're not experiencing a great deal of discomfort. You've probably driven Hughes Boulevard and ... realize how congested it is, so that kind of gives you an idea of what we're designing for," Argabright said.

Major thoroughfares that are currently over-capacity include:

- Road Street from U.S. Highway 17 to Ehringhaus Street.
- Hughes Boulevard from Church Street to Elizabeth Street, from Road Street to Barney Lane and from Hastings Lane to Culpepper Lane.
- U.S. Highway 158/N.C. 34 from Country Club Road to the bridge across the Pasquotank River.
- Water Street from Elizabeth Street to Fearing Street.

Other segments of Road Street, U.S. Highway 17 and Water Street are projected to be over-capacity by 2020, assuming that programmed projects on the current state Transportation Improvement Plan (TIP) are constructed.

Argabright laid out a series of proposed solutions that would entail numerous road improvements, including several that are already funded in the current TIP, such as the proposed U.S. Highway 17 Bypass and connector roads.

The proposed thoroughfare update also recommends widening Water Street downtown from about 42 feet to 48 feet.

"This would allow four 11-foot lanes plus two feet on each side for gutter," Argabright said. "We would need to widen three feet on each side and remove the existing parking."

The change could also mean moving electrical wires underground, he said.

Other proposed improvements:

- Widening Hughes Boulevard to five lanes from Church Street to the southern end of the bridge over Knobbs Creek.
- Making a small extension of Walker Avenue over to Roanoke Avenue.
- Connecting Trinkaloe Road to Selby Road on over to Perkins Lane.
- Making Main Street and Colonial Avenue one-way west of Road Street, and changing Shepard Street from one-way to two-way.

DOT, in conjunction with the city, will hold a mandatory public hearing on the proposed updates Monday at 7 p.m. in Courtroom B of the Pasquotank County Courthouse.

City's traffic changes unveiled

THE DAILY ADVANCE
1/29/96

■ Plan updates design to fix city's current, future road problems

By TOM LANGHORNE
Staff writer

The public will get its first look tonight at proposed changes that would affect city traffic flow for decades to come.

A mandatory public hearing on the Elizabeth City Thoroughfare Plan updates will be held at 7 p.m. in Courtroom B of the Pasquotank County Courthouse. State transportation department and city planning officials are expected to be on hand to answer questions.

At city council's Jan. 22 meeting, DOT Project Engineer R. Van Argabright defined the major thoroughfare plan as "a document that specifies the transportation improvements necessary to accommodate future traffic growth."

"It's our first step in the planning process of getting a road built," Argabright told council. "This is a 25-year plan."

Major thoroughfares that are currently over-capacity include:

- Road Street from U.S. Highway 17 to Ehringhaus Street.
- Hughes Boulevard from Church Street to Elizabeth Street, from Road Street to Barney Lane and from Hastings Lane to Culpepper Lane.
- U.S. Highway 158/N.C. 34 from Country Club Road to the bridge across the Pasquotank River
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Other segments of Road Street, U.S. Highway 17 and Water Street are projected to be over-capacity by 2020, assuming that programmed projects on the current state Transportation Improvement Plan (TIP) are constructed.

DOT and city planning officials have proposed a series of solutions that would entail numerous road improvements, including several that are already funded in the current TIP, such as the proposed U.S. Highway 17 Bypass and connector roads.

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THE DAILY ADVANCE
1/31/96

STAFF PHOTO BY BRIAN VANDERVLIET

W. D. Richards III (right) of Elizabeth City uses a map at the Pasquotank County Courthouse to show state Department of Transportation project engineer R. Van Argabright his concerns about a possible change in local roadways at a public hearing Monday.

Neighborhood afraid road plan will take homes

By TOM LANGHORNE
Staff writer

W.D. Richards III fears that he and his wife Margaret and several of their neighbors could be forced out of their homes if proposed updates to the city's thoroughfare plan are approved.

According to one alternative segment of the state transportation department's plans, our homes are right in the path of a new interstate they would be building," Richards said Tuesday night. "Our houses in Oxford Heights, on Lexington and Bonner Drives, would be destroyed. At least eight of them."

Richards said he and his neighbors object to a proposal to bring the interstate from the intersection of Hughes and Halstead Boulevards (about two miles from their homes), through a nearby swamp and on through their neighborhood. From there, he said, it would connect "somewhere out onto the proposed 17 Bypass."

The proposed bypass includes northern and southern on-off ramps which motorists could use to exit or enter the city, Richards said. He said it's the proposal for a "middle" ramp, or bypass connector road, which threatens his and his neighbors' homes. "I don't see why you would need a middle ramp," he said. "Anybody who wants to come to Elizabeth City can get in here either north or south."

Richards said he and his neighbors favor an alternative to the middle ramp that "goes through the swamp and makes a curving, gradual left turn back to the proposed bypass."

"This would take out the Oxford Heights Park and no housing," he said. "The interstate would go right through the park."

The citizens will take their case to city council, which must approve any thoroughfare plan updates, on Feb. 5.

"The whole neighborhood will be there, probably," Richards said.

"DOT has said they would give us fair market value for our homes and property, but this proposal has a six-year evolution, and I'll be 60 by then. Most of my neighbors are already 60. What mortgage company is going to give us a mortgage for 30 years to rebuild our present homes somewhere else? By the time they get the whole bypass done, and it's in operation, it will be too late for us."

THE DAILY ADVANCE
1/31/96

Merchants fear Water Street plan

■ Store owners say four-laning road will wipe out businesses

By TOM LANGHORNE
Staff writer

Businesses on Water Street will be wiped out if the state's proposal to widen the street downtown is approved, a local merchant said this week.

Norman Gregory, owner of The New Fowler Store at 113 North Water Street, made the claim at a public hearing on proposed updates to the Elizabeth City thoroughfare plan. Several of the approximately 40 people in attendance, including Mayor Rick Gardner, said they agree.

The proposal which drew Gregory's ire would involve widening of Water Street from Elizabeth Street to Fearing Street to 48 feet. That segment of road (face of curb to face of curb) is now 42 feet wide.

"This would allow four 11-foot lanes plus two feet on each side for gutter," state Department of Transportation project engineer R. Van Argabright told city council last week.

"The change could also mean moving electrical wires underground, Argabright said. It is needed, he said, because that segment of Water Street is over-capacity now and will only become more so in years to come. But Gregory said spending millions to "tear up telephone poles and power poles" and widen the street for four blocks is unnecessary when DOT could realize its objective merely be altering a set of turning lanes.

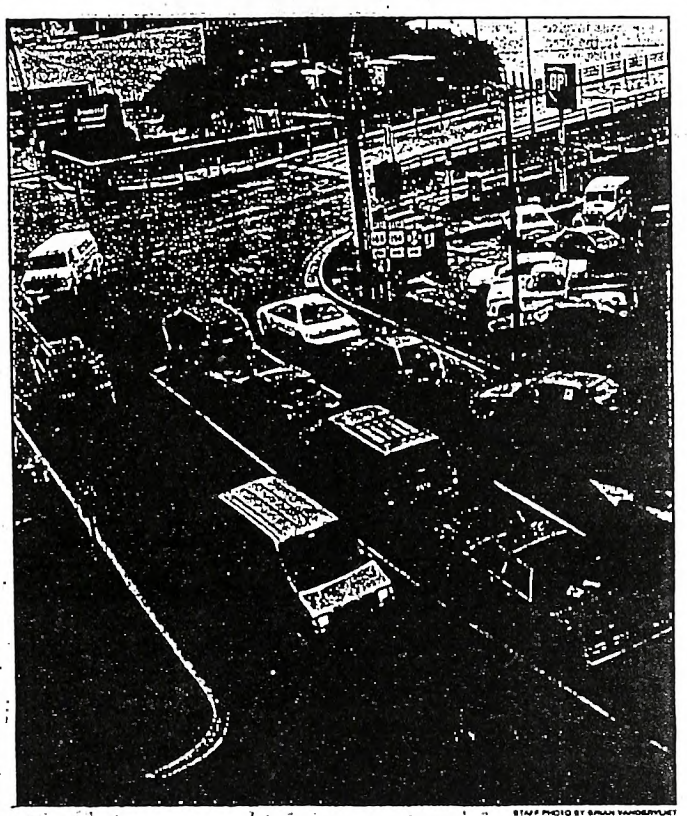
"This proposed plan would eliminate all the parking spaces on Water Street for four blocks on both sides of the road," he said after Monday night's hearing.

DOT's plan would mean eliminating three feet of existing sidewalks on both sides of the road — a move Gregory said would devastate Water Street businesses.

"You'd basically kill all foot traffic," he said. "You would not be able to cross the street from one side to the other. You would have nowhere to park on either side of Water Street, and basically all the businesses on Water Street would die."

Gregory said the DOT plan, crafted in conjunction with city planning officials, also would run counter to the city's efforts to promote the downtown waterfront as a sedate bedroom community.

"You've got a real pretty residential section down there, and all of a suddeo you're creating a four-lane," he said. "You're promoting Water Street to be a main thoroughfare."



STAFF PHOTO BY BRIAN VANDERPLOEG

Automobiles travel along Water Street at the intersection of Elizabeth Street Tuesday as the afternoon rush hour begins to build up. Water Street merchants say a plan to widen the road to four lanes would do serious damage to their businesses.

There is a simple solution, Gregory said. "About 75 percent of the traffic on Water Street is traveling north, leaving Elizabeth City, going from Ehringhaus toward the Camden Causeway bridge," he said. "When you come to the foot of the bridge at Elizabeth Street, the right lane is for right turns and people going straight across Elizabeth Street. And there's a left turn lane for just left turns.

"The traffic backs up for about two and a half blocks at 3:30 to 4 p.m. Of all those cars, very few will travel straight through the intersection. So, in essence, you have one car holding up 25 or 30 behind it who, if that car were not there, would turn right and go across the bridge."

Simple changes to the configuration of lanes would go a long way toward alleviating the traffic problem which has DOT's engineers so anxious, Gregory said.

"They could make the right turn lane for right turns only and make the left turn lane for straight-through drivers as well as left turns," he said. "Give that a year to see if it alleviates the problem.

"Hey, I would rather see Water Street become two lanes one-way, and then maybe Road Street between Elizabeth and Main would be two lanes the opposite way. I'd rather not see that actually, but it's the lesser of two evils."

DOT's proposal also would make it impossible for tractor-trailers bearing freight to park on Water Street for unloading, Gregory said.

"If they do away with sidewalk and parking and loading zones, then basically you're going to have trucks every day of the week that are going to stop in one of those four lanes of traffic, then have to sit there and unload freight," he said.

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2/1/96

DOT says merchants must see city about Water St. widening

Continued from Page 1A

Dudeck said.

"There's only two lanes there now, so we've only got half as much capacity as needed," he said. "We need four lanes for safety as much as anything. The parking spaces have to be eliminated. That's our recommendation to the city council -- it's up to them what to do."

Dudeck said Gregory's proposal to reconfigure turning lanes at the foot of the Camden Causeway would be a helpful addition to DOT's plan -- but it isn't enough by itself to solve the traffic congestion problem.

Likewise, he said, the storeowner's proposal to make Water Street two lanes one way and Road Street between Elizabeth and Main two lanes in the opposite direction also would be inadequate.

"That would just create bottlenecks at other locations," Dudeck said. "We'll consider anything, but under that scenario you've still just got two lanes on part of Water Street. It's just as much traffic, except it's going one way."

Dudeck did have a few consolatory words for Gregory and his fellow merchants.

"Taking parking spaces could just be the initial step," he said. "As to when that would be done, that's up to the city. It depends on how much they push for it. And the taking of three feet of sidewalk could be done as much as 15 or 20 years from now."

Asked about the merchants' concerns that trucks bearing freight could not park on Water Street for unloading under DOT's scenario, Dudeck said there is room for compromise.

"You wouldn't want trucks unloading during rush hour, but the plan is flexible," he said. "There could be loading zones during some hours.

"We'd like to encourage more off-street parking in that area, actually, because it would be safer for motorists. That's what we're shooting for, after all -- a long-range transportation plan that is operationally sufficient and which maximizes driver safety."

State DOT official responds to concerns of thoroughfare plan foes

By TOM LANGHORNE
Staff writer

One group of citizens opposing proposed city thoroughfare changes can rest assured that its worst fears probably won't come to pass -- but the other probably should gird for battle.

Jerry Dudeck, state transportation department thoroughfare planning engineer, said Wednesday that DOT's proposed updates to the Elizabeth City Thoroughfare Plan probably will satisfy residents of Oxford Heights who are concerned that their homes may be taken by an interstate.

But Water Street merchants opposed to a proposal to widen the street downtown will have to turn to city council for relief, Dudeck said, because DOT's not backing down.

The concerns of both groups were reported in Wednesday's edition of The Daily Advance.

"The line we showed (that goes through houses in Oxford Heights) is an option that's not being seriously considered," Dudeck said. "That particular line was on a feasibility study done by another DOT branch a year or two ago. We just showed it (at a public hearing Monday night) to show what has been looked at in the past, for historical purposes.

"[illegible] that, (Oxford Heights residents) probably don't have anything to worry about."

But Dudeck said DOT still sticks by its proposal to widen Water Street downtown to four lanes -- thereby eliminating parking spaces and three feet of existing sidewalk on both sides of the street for four blocks. Water Street merchants, led by The New Fowler Store owner Norman Gregory, have said those proposals would destroy their businesses by choking off customer access.

"There's enough traffic on that road to justify (the proposals) right now, and this is a 20-24-year plan we're talking about," Dudeck said. "There are about 14,000 vehicles going both directions on Water Street every day, and it's going to get even more congested in the next 20 years."

To leave Water Street from Elizabeth Street to Fearing Street as is would be to choose "parking convenience for a few people at the expense of 14,000 motorists,"

Please see DOT on Page 7A

Water St. merchants mobilizing for fight

THE DAILY ADVANCE
2/2/96

■ Merchants, supporters will lobby city council to defeat DOT proposal

By TOM LANGHORNE
Staff writer

If it's a fight state transportation engineers want with Water Street's business community, it's a fight they'll get.

The New Fowler Store owner Norman Gregory, ringleader of a group opposing the state Department of Transportation's proposal to widen Water Street downtown, said Thursday that he and other like-minded merchants are preparing for war.

"I'm writing to Peggy Langley (director of Elizabeth City Downtown, Inc.), formally asking for whatever help they can give, maybe information and technical assistance," Gregory said. "Maybe they can help also sway city council to defeat this proposal."

Two council members, Zack Robertson Jr. and Myrtle Rivers, are on Elizabeth City Downtown's board of directors. So are Lydia Gardner, Mayor Rick Gardner's wife, and Planning Director Victor Shurpe.

Gregory said he has taken steps to speak at city council's Feb. 5 meeting and Feb. 19 work session. On both occasions, he said, he will be accompanied by fellow Water Street merchants.

DOT's plan, included in proposed updates to the Elizabeth City Thoroughfare Plan, is to widen Water Street from Elizabeth Street to Fearing Street to four lanes. Parking spaces and three feet of existing sidewalk on both sides of the street would be eliminated.

But Water Street merchants, led by Gregory, have said the proposal would destroy their businesses by choking off customer access. DOT officials have said they will not back down, so Gregory and his allies will concentrate their efforts on persuading city council to reject the proposal.

"I'll collect letters from property owners, business owners and tenants to present at the Feb. 19 council session," Gregory said. "I'll also gather information for a petition to be signed by these same people and any other businesses not on Water Street that would be affected by (DOT's proposal).

"Anyone at all who wants to help can call me at 335-5486."

Gregory said he will try to enlist the support of the Elizabeth City Historic Preservation Commission as well. He scoffed at DOT's assertion that Water Street customers should utilize off-street parking

> **"They've got their minds made up. ... They have numbers, and they've got a four-lane in mind."**
>
> **– Norman Gregory**

Gregory said. "There is no off-street parking. Downtown Elizabeth City has had a parking problem for the past 20 years."

Likewise, Gregory said he doesn't buy DOT's claim that 11,500 vehicles go both directions on Water Street every day.

"Look, the state's concern is moving traffic," he said. "They don't give a damn about the economics of the city or its businesses."

DOT engineers are fixated on engineering solutions to Water Street's traffic problem to the exclusion of more creative solutions, Gregory said.

"They've got their minds made up," he said. "These men are from (DOT's) engineering department. They have numbers, and they've got a four-lane in mind.

"You can lay a rubber hose across the road and count the number of cars, but until you study which way they're going, the times of day and when they're backing up, you can't say there's a congestion problem — not until you exhaust all your means of determining where this traffic is going. It's not just the fact that they're using the road.

"There's a lot at stake here. (The New Fowler Store) has been a family business since 1948 in that same location. I don't want to lose it."

OUR VIEW

2/2/96

Water St. widening is part of growth

For much of the last 20 years, area residents have begged for better roads. Citizens and officials have agreed that more access would increase traffic which would lead to more business, tourism and residential growth and, in turn, spur economic development.

So why are some of the city's merchants now opposing a four-laning project that accommodates traffic growth spawned by that development? They have their reasons, but we think the four-laning is a good idea — for them and the rest of the city's residents.

The 20-year quest to widen area highways and thoroughfares has been successful. In that time, U.S. Highway 17 from Hertford to the Virginia state line has been four-laned as have portions of N.C. Highway 168 in Currituck. Other widening projects have included Halstead Boulevard to accommodate heavier traffic from the U.S. Coast Guard base and residential growth areas in Weeksville and other points in south Pasquotank.

And other widening projects are in the works that will improve traffic access. Among them, the completion of the Raleigh to Norfolk corridor will add yet another major traffic artery through the Albemarle.

These projects represent the culmination of a vision for economic expansion and access in the northeast. And they are already having an effect on local growth.

Last week another four-laning project was added to the list. But some merchants and business owners fear that the N.C. Department of Transportation thoroughfare plan that would widen Water Street is going to threaten their businesses.

We agree the change will create some challenges. The DOT plan was presented this week to city officials and to the public at a hearing. It recommends widening Water Street to four lanes from Fearing Street to the foot of Elizabeth Street. The road would grow from 42 feet to 48 feet wide. That would require taking three feet of sidewalk from both sides of the street as well as eliminating parking. It would also require putting utility services underground.

Opponents say the widening will harm the Water Street shopping area. We think the increased traffic is going to build business.

Just look at Ehringhaus Street. That also used to be a two-lane road. Now look at it and the businesses that have sprouted along both sides of the strip. A similar situation exists on Halstead Boulevard, where development is currently under way along the route.

We agree, the problem of parking has to be addressed. Downtown businesses and shoppers have been screaming about this for several years. But the problem has been created from positive forces — an improving business climate. Elizabeth City is fortunate to have a downtown that is growing. Many downtowns wish they had a parking problem — it would mean they had an overflow of customers and businesses.

But parking should not be an obstacle to a project that will enhance future growth. It should not prevent the city from wanting to improve traffic flow.

The DOT plan is a response to the increasing traffic along Water Street. It is already a problem, especially during the morning and afternoon hours. That problem is only going to get worse in the years ahead. And the safety of motorists and pedestrians in that area will become less controllable unless traffic flow conditions are improved.

Making the area one way, as some have suggested, will not work. Traffic would have to be rerouted around the downtown, creating delays and bottlenecks in other areas. Finding off street parking is a better alternative.

Rather than ask the city to oppose a traffic flow improvement plan, why not take this parking issue to city hall and say: "Do something about it. Let's make parking a city priority."

It may be that a city-operated parking deck is an idea whose time has come.

But road improvements that increase safety, traffic flow and access to our business district are also a priority, as they have been for over two decades.

Public poll: Do you think Water Street should be widened?

J.C. Forbes, Elizabeth City:
"No. I think it's wrong. It will ruin all the business downtown."

David Scott, Elizabeth City:
"It should stay just like it is. The idiots in the state department could care less."

Kathryn Nance, Elizabeth City:
"I think it could destroy landmark places. We should preserve something for the next generation."

Terry Holley, Hertford:
"I think it should become four lanes because it's so tight down there."

Esther Jarvis, Point Harbor:
"It would be great if it could be four lanes, but I know it would be hard for the businesses."

LaTonya Lewis, Elizabeth City:
"It should stay the way it is. It would be an inconvenience to the businesses otherwise."

THE DAILY ADVANCE
2/5/96

Council to hear from Water Street merchants

By TOM LANGHORNE
Staff writer

City council will meet as scheduled at 7 p.m. despite inclement weather, City Manager Steven Harrell said this morning.

Harrell said most of the city's workforce will be on the job today, though some employees may get to work late.

"The mayor and I talked about (whether to cancel tonight's city council meeting), and it was decided that if we can go into work today, we can hold the city council meeting," he said. "Weather conditions are not supposed to change noticeably."

Norman Gregory, owner of The New Fowler Store, and other Water Street merchants are expected to appear at tonight's meeting to make known their concerns about the state transportation department's proposal to widen the street downtown. DOT's plan, included in proposed updates to the Elizabeth City Thoroughfare Plan, is to widen Water Street from Elizabeth Street to Fearing Street to four lanes.

THE DAILY ADVANCE
2/7/96

Updated plan must be adopted by council, state Board of Transportation

By TOM LANGHORNE
Staff writer

Proposed updates to the Elizabeth City Thoroughfare Plan may have prompted much sound and fury, but apparently there's not much urgency: the updates must run a time-consuming gauntlet of obstacles before they can be approved.

City council is expected to address the state Department of Transportation's proposed thoroughfare plan updates within the next couple of months. Following a second public hearing — no date has been set — it will be up to council to adopt the updated plan or make changes.

After city council members take action, DOT engineers will scrutinize the finished product to be sure it meets traffic and safety requirements. Assuming all goes well, the thoroughfare plan will be forwarded to the state Board of Transportation for final approval.

If the city and DOT's engineers still have irreconcilable differences at that point, the plan goes back to the drawing board.

Council has already gotten into the act in an attempt to modify DOT's controversial proposal to widen Water Street from Elizabeth Street to Fearing Street to four lanes. Parking spaces and three feet of existing sidewalk on both sides of the street would be eliminated.

But Water Street merchants, led by The New Fowler Store owner Norman Gregory, have said the proposal would destroy their businesses by choking off customer access. DOT officials have said they will not back down, so Gregory and his allies are concentrating their efforts on persuading city council to reject the proposal.

Council members asked City Manager Steven Harrell Monday night to produce a resolution recommending an alternative proposal to DOT engineers.

"(The resolution) will recommend to the state that they make the left hand turn lane (at the foot of the Camden Causeway) a through lane and a left turn lane," Harrell said afterward. "It's a left turn lane only now. The right lane, which is a thru lane and a right turn lane, would become a right turn only lane."

Harrell will bring the finished resolution back to city council at its Feb. 19 work session.

If the state would agree to the alternative, Councilman Zack Robertson Jr. said Monday night, "it would eliminate half of that traffic down there."

Gregory asked council to include in its resolution the added alternative of "controlling the bridge openings during peak hours."

Members agreed to do so.

State takes second look at Water St. proposal

THE DAILY ADVANCE
3/14/96

Harrell says DOT's latest letter should be considered good news

By TOM LANGHORNE
Staff writer

Water Street merchants opposed to the state's controverstal proposal to widen the street can claim another small victory.

Dan Conner, division engineer at the state transportation department's Ahoskie office, has notified the city that DOT will "review the feasibility" of city council's proposed alternative plan for Water Street.


Harrell

"I interpret this to mean that DOT will maintain an open mind as they look at our proposal," City Manager Steven Harrell said Wednesday. "That's good news."

Last month city council passed a resolution asking DOT to "immediately implement" the following traffic control measures for Water Street:

- "Make the existing northbound left-turn-only lane, at Water Street and Elizabeth Street, into a left turn and through traffic lane and install a left turn signal light with this newly created lane;
- "Make the existing northbound right turn and through lane at Water Street and Elizabeth Street into a right turn only lane;
- "Regulate opening of draw bridge at this intersection so as not to occur at peak traffic hours."

Conner's letter to Harrell states that DOT will "review the feasibility of modifying the lane markings and signal operation at the intersection of Water Street and Elizabeth Street (U.S. 158)."

"Also, we will review the feasibility of regulating the draw bridge on U.S. 158 over the Pasquotank River per the city's request," the letter states.

The DOT plan which has aroused so much opposition calls for widening Water Street from Elizabeth Street to Fearing Street from 42 feet to 48 feet. The widening would accommodate four 11-foot lanes plus two feet on each side for gutter. Parking spaces and three feet of existing sidewalk on both sides of the street would be eliminated.

But Water Street merchants, led by The New Fowler Store owner Norman Gregory, have said the proposal would destroy their businesses by choking off customer access. Gregory and his allies are concentrating their efforts on persuading city council to reject DOT's plan.

Gregory could not be reached for this story.

THE DAILY ADVANCE
4/15/96

Water St. on city council's agenda

■ State officials will discuss DOT's updates to thoroughfare plan

By TOM LANGHORNE
Staff writer

Tonight's city council work session is a "must-see" event for citizens interested in the state Transportation Department's controversial proposal to widen Water Street.

DOT engineers will attend the meeting to discuss their proposed updates to the Elizabeth City Thoroughfare Plan, which contains the proposal to widen Water Street from Elizabeth Street to Fearing Street to four lanes. Parking spaces and three feet of existing sidewalk on both sides of the street would be eliminated.

City council members are expected to ask questions and comment on the proposal, which has drawn fire from Water Street merchants.

A second public hearing on the Thoroughfare Plan updates is scheduled for Tuesday, April 23. Then it will be up to council to adopt the updated plan or make changes.

After city council members take action, DOT engineers will scrutinize the finished product to be sure it meets federal traffic and safety requirements. Assuming all goes well, the Thoroughfare Plan will be forwarded to the state Board of Transportation for final approval.

If the city and DOT's engineers still have irreconcilable differences at that point, the plan goes back to the drawing board.

Council has already gotten into the act in an attempt to modify DOT's controversial Water Street proposal by passing a resolution recommending an alternative plan to DOT engineers.

DOT's Water Street proposal is not expected to pass muster with city council in the end. In February, The New Fowler Store owner Norman Gregory told The Daily Advance that City Manager Steven Harrell and an unnamed council member had told him the proposal probably will not have enough support to pass council.

DOT watch

Street plan pushed to back burner

■ State engineers will check city's alternative plan in about two months

By TOM LANGHORNE
Staff writer

Apparently knowing when to hold 'em and when to fold 'em, state Transportation Department engineers have backed off their controversial proposal to widen Water Street — for now.

DOT engineers Jerry Dudeck and R. Van Argabright told city council Monday night that, for the time being, they are making no recommendations concerning Water Street.

Dudeck and Van Argabright's original recommendation to widen the street from Elizabeth Street to Fearing Street to four lanes was contained in DOT's proposed updates to the Elizabeth City Thoroughfare Plan. Parking spaces and three feet of existing sidewalk on both sides of the street would have been eliminated.

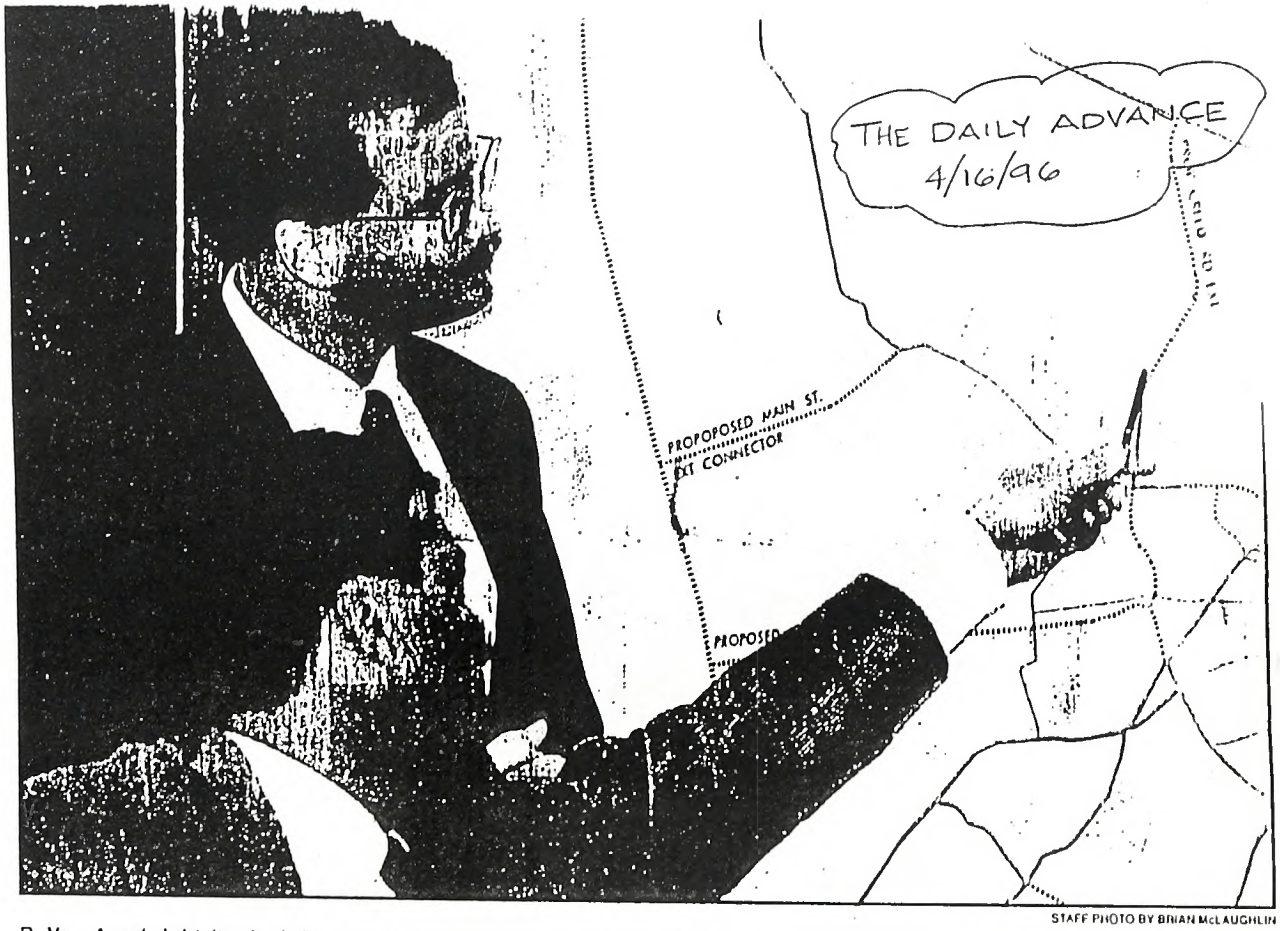
That proposal, made in late January, immediately drew heavy fire from Water Street merchants who claimed it would destroy their businesses by choking off customer access.

City council sided with the merchants, passing a resolution in February that recommends an alternative proposal. Council asked, and was granted, an extra six months to "further study the traffic flow issue on Water Street in order to provide acceptable alternatives to widening Water Street."

Asked after Monday's meeting why DOT had backed off its original recommendation, Van Argabright cited the controversy and the city's request for additional time.

"It just seemed like something that needed to be studied," he said. "It's their city; they're the ones that have to live in it.

"We'll probably come back in a couple of months and see if they've made any progress, but in the meantime (city council) could adopt the Thoroughfare Plan as recommended by us and we and they could still jointly work on what should happen to Water Street.



STAFF PHOTO BY BRIAN McLAUGHLIN

R. Van Argabright (top) of the North Carolina Department of Transportation and Elizabeth City Councilman Lloyd Griffin III discuss aspects of DOT's proposed Thoroughfare Plan during the city council meeting Monday night.

"It just seemed like something ... to be studied. It's their city; they're the ones that have to live in it."

– R. Van Argabright

"Technically, they don't adopt the cross-sections; they adopt the map (of the proposed Thoroughfare Plan)."

Van Argabright defined a cross-section as "the number of lanes on a given road and how they are configured." He could be no more specific than that.

City Manager Steven Harrell offered his own definition after Monday's meeting: "A cross-section is a section of road or infrastructure cut in half and then looked at from the end."

A second public hearing on DOT's Thoroughfare Plan updates is scheduled for Tuesday, April 23. Then it will be up to council to adopt the updated plan or make changes.

After city council members take action, DOT engineers will scrutinize the finished product to be sure it meets federal traffic and safety requirements. Assuming all goes well, the Thoroughfare Plan will be forwarded to the state Board of Transportation for final approval.

If the city and DOT's engineers still have irreconcilable differences at that point, the plan goes back to the drawing board.

Thus far, Harrell said, he has received "positive" input from state officials.

THE DAILY ADVANCE
4/17/96

Engineers: Thoroughfare Plan can benefit E. City

■ DOT's proposal would reduce total miles of travel daily, they say

By TOM LANGHORNE
Staff writer

Vehicle miles driven in Elizabeth City are expected to double before the year 2020 — but state transportation engineers think they can cut down on the traffic.

Engineers Jerry Dudeck and R. Van Argabright told city council Monday night that adopting DOT's proposed Thoroughfare Plan would reduce approximately 5,000 total miles of travel daily.

The Elizabeth City Thoroughfare Plan is a map that specifies current and proposed major and minor thoroughfares. DOT's plan for the city shows changes that are expected by 2020. Its proposals for new and wider roads are based on such growth factors as population and employment projections and traffic patterns.

In January Dudeck and Van Argabright showed council a first draft of an updated Thoroughfare Plan.

A public hearing was held shortly afterward. Another hearing, on the revised plan, will follow Tuesday night.

DOT's Thoroughfare Plan depicts several local roads as overcrowded, including parts of Water and Road Streets, U.S. Highway 17 and U.S. Highway 158/N.C. Highway 34 in Camden County. Proposed solutions include the already approved U.S. 17 Bypass and several recommended connectors and road widenings.

Van Argabright tried Monday night to dispel what he characterized as a widespread misconception.

"A Thoroughfare Plan is not an accumulation of detailed designs accurate enough for the buying of right-of-way," he said. "A common misconception is that construction is imminent.

"Proposed thoroughfares will typically not be built immediately, but over 10-20 years. The public needs to know that."

State has 'other ideas' for Water St.

■ Engineer says DOT is waiting for city to conclude its studies

By TOM LANGHORNE
Staff writer

A state transportation department engineer said Tuesday night that he has "other ideas" about what to do with Water Street — but he refused to say what they are.

R. Van Argabright, DOT project engineer, told about 15 people in city council chambers that he prefers to wait until the city has had a chance to make its own recommendations before he unveils his ideas. Van Argabright made the remark at DOT's second public hearing on its proposed Elizabeth City Thoroughfare Plan.

In recent public remarks Van Argabright and fellow engineer Jerry Dudeck have downplayed their original controversial proposal to widen Water Street, addressing it only when asked and preferring to focus on other aspects of the Thoroughfare Plan.

Tuesday night, it was Water Street merchant Norman Gregory — ringleader of the local opposition to DOT's original plan — who did the asking.

Noting that there are any number of viable alternatives to widening Water Street, Gregory asked if the state is "considering any alternatives other than the one presented, or is it sticking to the plan?"

Van Argabright replied that DOT will wait for the city to finish studying traffic flow on Water Street as per an earlier agreement between the state and city council.

"I've got some other ideas, but it would be more appropriate to wait for the city's response," he said. "They may revolutionize transportation as we know it."

Van Argabright and Dudeck told council members earlier this month that, for the time being, they are making no recommendations concerning Water Street.

The engineers' original recommendation to widen the street from Elizabeth Street to Fearing

Please see DOT on Page 7A

THE DAILY ADVANCE
4/24/96

DOT mum about its Water Street ideas

Continued from Page 1A

Street to four lanes was contained in DOT's proposed updates to the Thoroughfare Plan. Parking spaces and three feet of existing sidewalk on both sides of the street would have been eliminated.

That proposal, made in late January, immediately drew heavy fire from Water Street merchants who claimed it would destroy their businesses by choking off customer access.

City council sided with the merchants, passing a resolution in February that recommends an alternative proposal. Council asked, and was granted, an extra six months to "further study the traffic flow issue on Water Street in order to provide acceptable alternatives to widening Water Street."

Also at Tuesday night's public hearing, several citizens pressed for details about how specific aspects of the Thoroughfare Plan would affect their property. They also wanted to know about timetables for specific projects.

At this stage in the process, the engineers replied, that is unknown.

Dudeck said more details will be available at "the design public hearing." Asked when that hearing will be held, he said the schedule is determined "on a project-by-project basis." Several of the citizens present appeared dissatisfied with Van Argabright and Dudeck's failure to provide more specific information, but the engineers reminded them that it is still early in the Thoroughfare Plan process.

Key aspects of the plan are not written in stone, they added.

THE DAILY ADVANCE
6/19/96

State, city got signals crossed on Water Street

Council, DOT engineer were each waiting for the other to act on project

By TOM LANGHORNE
Staff writer

It was all just a misunderstanding.

City and state officials discovered Monday night that the state transportation department's controversial proposal to widen Water Street has languished for four months because each side has been waiting for the other to take action.

Officials learned that they had misread each other's intentions when Councilman Zack D. Robertson Jr. asked DOT Project Engineer R. Van Argabright to tell him what the department had "finally come up with on Water Street."

A startled Van Argabright replied that DOT officials have been waiting for the city to finish studying traffic flow on Water Street as per an earlier agreement between the state and city council. Then, Van Argabright said, he would make his own recommendations.

City council passed a resolution in February asking for an extra six months to "further study the traffic flow issue on Water Street in order to provide acceptable alternatives to widening Water Street." DOT granted the request.

Monday night, Robertson told Van Argabright that council's resolution, which asks DOT to "immediately implement" several alternative traffic measures for Water Street, was intended to spur action by the state.

"But I don't see that the state has done a thing," he said.

Robertson and other council members made it clear that they had intended DOT to implement changes, if only on a trial basis, for six months.

Councilman Lloyd Griffin III said a "six-month test traffic pattern to re-alter the traffic" would be to his liking.

DOT engineers' original recommendation to widen Water Street from Elizabeth Street to Fearing Street to four lanes was contained in the department's proposed updates to the Elizabeth City Thoroughfare Plan. Parking spaces and three feet of existing sidewalk on both sides of the street would have been eliminated.

That proposal, made in late January, immediately drew heavy fire from Water Street merchants who claimed it would destroy their businesses by choking off customer access.

City council's resolution requests the following traffic control measures:

- "Make the existing northbound left-turn-only lane, at Water Street and Elizabeth Street, into a left turn and through traffic lane and install a left turn signal light with this newly created lane;
- "Make the existing northbound right turn and through lane at Water Street and Elizabeth Street into a right-turn-only lane;
- "Regulate opening of draw bridge at this intersection so as not to occur at peak traffic hours."

Monday night, Van Argabright said city council could adopt the Thoroughfare Plan as recommended by DOT while continuing to work with the department for a resolution of the Water Street situation.

"Technically speaking, council doesn't adopt the cross-sections; it adopts the map (of the proposed Thoroughfare Plan)," he said.

Van Argabright said he had simply misread city council's intentions.

He said he now understands that "you want DOT to switch the configuration around and then the city (would) observe the situation for six months."

"I misread the six month study," he said. "I thought there was an ongoing study of the situation. I was waiting for some sort of engineering study to be done with maybe some alternate solution."

"So that's why I have no recommendation on Water Street, and again I remind you that it will be a part of the Thoroughfare Plan report, but it will not be something that the city adopts."

Robertson said he too had contributed to the "miscommunication."

"It was my understanding that the state was going to do it, and I've been looking, looking and looking, waiting for the state to change the pattern so that we could observe it and see what was going to happen," he said.

THE DAILY ADVANCE
6/20/96

Water Street saved from widening

■ Decision means total victory for merchants who objected to DOT plan

By TOM LANGHORNE
Staff writer

In a stunning victory for Water Street merchants, the state transportation department has formally abandoned its controversial proposal to widen the street downtown.

DOT Project Engineer R. Van Argabright said Wednesday that the department had agreed only hours earlier to accept alternate proposals advanced by city council at the merchants' request.

The decision, which means no parking will be taken on Water Street, came less than 48 hours after Van Argabright told council members that DOT probably would not be willing to spend money to try their proposals on a trial basis.

City Manager Steven Harrell said Wednesday morning that DOT's change of heart came after Van Argabright contacted Division Engineer Don Conner following Monday night's city council work session.

"They're now willing to (adopt council's alternative plan) without taking any parking on Water Street, and to see how that works out," Harrell said.

City council passed a resolution in February asking DOT to "immediately implement" the following alternative traffic control measures for Water Street:

- "Make the existing northbound left-turn-only lane, at Water Street and Elizabeth Street, into a left turn and through traffic lane and install a left turn signal light with this newly created lane;
- "Make the existing northbound right turn and through lane at Water Street and Elizabeth Street into a right-turn-only lane;
- "Regulate opening of draw bridge at this intersection so as not to occur at peak traffic hours."

"The (U.S. Army) Corps of Engineers agrees to our proposal for the draw bridge, but it would only apply to pleasure craft, not commercial or governmental craft," Harrell said Wednesday.

DOT engineers' original recommendation to widen Water Street from Elizabeth Street to Fearing

Please see WATER on Page 5A

Continued from Page 1A

Street to four lanes was contained in the department's proposed updates to the Elizabeth City Thoroughfare Plan. Parking spaces and three feet of existing sidewalk on both sides of the street would have been eliminated.

That proposal, made in late January, immediately drew heavy fire from Water Street merchants who claimed it would destroy their businesses by choking off customer access.

While confirming that DOT is willing to implement the proposals in city council's resolution, Van Argabright left no doubt Wednesday that he disagrees with the city's solution.

"It's a short-term fix for the problem," he said. "My preference is four lanes while taking all parking on Water Street, but I feel like a good compromise would be three lanes with two lanes going north. That would at least postpone the problem or mitigate it for a few years.

"It would involve taking nine parking spots on the east side of Water Street."

At Monday night's city council work session, Van Argabright said many merchants on Water Street's east side appear to have adequate parking already. Wednesday, he issued a warning.

"Sometime within the next 25 years, something additionally should be done because the traffic congestion on Water Street will get worse, and eventually traffic likely will back up through the Ehringhaus Street light," he said. "You won't be able to get onto Water Street from Ehringhaus because the traffic will be backed up through that light."

But that prospect does not seem to worry New Fowler Store owner Norman Gregory, who led the charge against DOT's original proposal.

"That's great news!" Gregory said when told the city's alternative will be accepted. "It's good that the state finally listens to something the city wants instead of dictating to them.

"Yes, traffic is going to congest up at certain times of the day, but DOT's previous plan would have put us out of business."

The city will now have to request funds from DOT to get the necessary construction work done. Van Argabright and Conner agreed Wednesday that the cost will depend on how much work is needed and the nature of that work.

Equipment needs will be a major factor as well, both men said.

Conner estimated the cost at $10,000-$15,000, "and that's probably on the high side."

"I'd say the work probably can begin in about 90 days," he said. "Of course, we'll do it quicker if possible."

"You won't be able to get onto Water Street from Ehringhaus because the traffic will be backed up through that light."

– R. Van Argabright

THE DAILY ADVANCE 7/8/96

City OKs road plan

■ But council wants to approve changes before it's implemented

By TOM LANGHORNE
Staff writer

City officials have given the state transportation department a green light to proceed with the 1996 Elizabeth City Thoroughfare Plan — but there's a catch.

DOT engineers must get specific approval from city council prior to actually implementing any of the road changes in the plan.

City Manager Steven Harrell told council last Monday night that such approval is standard procedure at any rate, but Councilman Lloyd Griffin III insisted that the caveat be written into the plan. His motion to do so passed easily.

Councilman Don Cherry's subsequent motion to approve the Thoroughfare Plan itself passed by a 5-1 margin, with Councilwoman Dorothy Stallings and Councilman Jimi Sutton absent.

The lone "no" vote belonged to Councilwoman Anita Hummer, who said she still has too many questions about the plan to vote for it.

Among the Thoroughfare Plan's major proposed changes:

- Widening Hughes Boulevard to five lanes from Church Street to the southern end of the bridge over Knobbs Creek. This is seen as a safety measure as well as an attempt to increase capacity.
- Making a very small extension of Walker Avenue over to Roanoke Avenue.
- Connecting Trinkaloe Road to Selby Road on over to Perkins Lane.
- Making Main Street and Colonial Avenue one-way west of Road Street, and changing Shepard Street from one-way to two-way.

DOT engineers have said that vehicle miles driven in Elizabeth City are expected to double before the year 2020. Engineers Jerry Dudeck and R. Van Argabright told city council in April that adopting the Thoroughfare Plan would reduce approximately 5,000 total miles of travel daily.

The Thoroughfare Plan is a map that specifies current and proposed major and minor thoroughfares. DOT's plan for the city shows changes that are expected by 2020. Its proposals for new and wider roads are based on such growth factors as population and employment projections and traffic patterns.

The plan depicts several local

Please see PLAN on Page 5

Council approves thoroughfare plan

Continued from Page 1

roads as overcrowded, including parts of Road Street, U.S. Highway 17 and U.S. Highway 158/N.C. Highway 34 in Camden County.

Proposed solutions include the already-approved U.S. 17 Bypass and several recommended connectors and road widenings.

"A Thoroughfare Plan is not an accumulation of detailed designs accurate enough for the buying of right-of-way," Van Argabright told council in April. "A common misconception is that construction is imminent.

"Proposed thoroughfares will typically not be built immediately, but over 10-20 years. The public needs to know that."

With city council approval, the plan must now be adopted by the state Board of Transportation.

APPENDIX C
"PHASED ENVIRONMENTAL STUDY" OF THE THOROUGHFARE PLAN

"PHASED ENVIRONMENTAL STUDY" OF THE ELIZABETH CITY THOROUGHFARE PLAN

Introduction

Since the most flexibility in locating a transportation improvement is found during the thoroughfare planning process, this is an excellent time to examine environmental issues. However, since the thoroughfare plan encompasses many projects, it is impractical to perform a complete environmental assessment that meets all the requirements of the National Environmental Policy Act (NEPA). The "Phased Environmental Study" process was developed by an interagency team that included senior management and staff from both the federal and state regulatory/resource agencies. This effort resulted in a process that does not require exorbitant amounts of manpower and yet addresses the major environmental issues and allows the most environmentally acceptable alternatives to be selected for inclusion in the thoroughfare plan.

The Process

The following are the basic steps that were followed during the completion of the "Phased Environmental Study" of the Elizabeth City Thoroughfare Plan:

1) The first step was the identification of transportation problems that presently exist or will come into existence before the year 2020. Improvement alternatives were then identified that would correct these problems.

2) The next step was determining which of the proposed improvement alternatives would be studied using the "Phased Environmental Study" process. For the Elizabeth City study, it was decided that all proposed improvement alternatives on new location would be studied while all the proposed improvement alternatives that involved only widening of existing facilities would not be studied.

3) Information was then gathered so that the impacts of the studied improvement alternatives could be compared. Existing sources of data such as National Wetlands Inventory (NWI) maps were used to assess potential environmental impacts. The only exception to this was in the case of historic architectural resources, where the information was compiled using field surveys. Since Resource/Regulatory Agencies had agreed to participate in the selection process, the environmental information was then assembled and displayed in a format that would allow the Agencies to assess the environmental impacts of each

improvement alternative.

4) The information was then distributed to the Resource/Regulatory Agencies. The information included: aerial photographs that were marked to show potential improvement alternatives along with the environmental and cultural resources in the area of the proposed improvement alternatives, the purpose and need of each improvement, and tables summarizing the predicted impacts of each improvement alternative.

5) A series of meetings was then held with the Resource/Regulatory Agencies to review the alternatives, field check areas of interest/concern, and form a consensus as to which alternatives were the most environmentally acceptable. The culmination of these meetings was the selection of the environmentally preferred improvement alternatives and the establishment of a Consensus Charter. The Consensus Charter specifies which of the improvement alternatives appear environmentally preferable based on the existing data and field work. The Charter also specifies appropriate caveats concerning future changes in information or laws/policy. Many of the Resource/Regulatory Agencies attached letters giving further details on the preferred alternatives. These preferred alternative corridors will provide the study areas for the individual projects as they become funded.

The Consensus Charter and attached letters are shown on pages C-26 thru C-43. Figures C-1a, C-1b, and C-2 are maps depicting all of the studied improvement alternatives. Pages C-5 thru C-25 include the purpose and need for the improvements and the tables summarizing the predicted environmental impacts. Figures C-1a Rev., C-1b Rev., and C-2 Rev. are maps depicting what was determined to be the most environmentally acceptable alternatives.

Modifications to Proposed Improvement Alternatives

At the request of the Resource/Regulatory Agencies, minor modifications were made to several of the improvement alternatives that were deemed to be the most environmentally acceptable. Improvement C was modified by widening the corridor near the Oak Stump Road end of the Improvement. This was done because it was felt that a more thorough examination of the wetland impacts in this area was appropriate. Improvement Alternative Blue 3 was modified by realigning Main Street Extension. This modification would allow the removal of the existing Main Street Extension crossing of the wetlands.

Charles Cox of the Planning and Environmental Branch of NCDOT requested that Improvement Alternative Black 2 be revised to provide a corridor wide enough to include Church Street. Mr. Cox was preparing to begin an Environmental Assessment of Project U-3449 (Halstead Boulevard Connector) and felt that further study should be done in regards to using existing Church Street as part of the Halstead Boulevard Connector.

Meetings

The major meetings with the Resource/Regulatory Agencies are described below.

1) December 15, 1995. In order to facilitate agency involvement, two meetings were held at agency locations (one at the Raleigh Corps of Engineers office and the other at the office of the U.S. Fish and Wildlife Service). The purpose of these meetings was to go over in detail the transportation problems, potential solutions, and assembled environmental information for Elizabeth City. Each agency was provided a full set of maps and documentation for their further study in preparation for a later field review.

   The following people attended these meetings: Federal Highway Administration (Kay Batey), N.C.D.O.T. (Charles Bruton, Leta Huntsinger, Van Argabright), U.S. Army Corps of Engineers (Mike Smith, Mike Bell), North Carolina Wildlife Resource Commission (David Cox), U.S. Fish and Wildlife Service (Cherry Green, Katherine Doak), Division of Environmental Management (Eric Galamb), Division of Coastal Management (Doug Huggett), and DEHNR - Highway Environmental Evaluation Program (David Foster).

2) On February 6, 1996, a field visit was made where the Resource Agencies examined the quality of the resources that were being impacted. The agencies assembled at the Elizabeth City office of the Division of Coastal Management. Then, on a large aerial photograph, the areas of interest were identified and a route was laid out to visit the appropriate sites. Each site was visited, examined as appropriate (including soil plugs) and discussed.

   The following people attended this meeting: N.C.D.O.T. (Van Argabright, Randy Turner, Robin Little), U.S. Army Corps of Engineers (Mike Bell), North Carolina Wildlife Resource Commission, (David Cox, Kin Hodges, Chad Thomas), U.S. Fish and Wildlife Service (Katherine Doak), Division of Environmental Management (Eric Galamb), Division of Coastal

Management (Frank Jennings, D.W. Hawthorn), and DEHNR - Highway Environmental Evaluation Program (David Foster).

3) On February 7, 1996, a meeting was held with the Department of Cultural Resources - State Historic Preservation Office to discuss the environmental information that had been compiled on historic resources. This meeting also discussed the process to be used on future plans, as well as issues such as how to proceed with archaeology. The meeting was attended by: Department of Cultural Resources (Renee Gledhill-Earley, Debbie Bevin, Claudia Brown), N.C.D.O.T. (Van Argabright, Scott Owen, Barbara Church), and DEHNR - Highway Environmental Evaluation Program (David Foster).

4) On February 13, 1996, a meeting was held where the proposed improvements were discussed in an effort to reach a consensus as to which improvement alternatives were most environmentally preferable. Because of the compiled data, aerial imagery, and field work, the agencies were able to reach consensus on seven environmentally preferred corridors for inclusion in the thoroughfare plan.

   The following people attended this meeting: Federal Highway Administration (Kay Batey, John Wadsworth), N.C.D.O.T. (Jerry Dudeck, Van Argabright, Blake Norwood, Scott Owen, Charles Cox), U.S. Army Corps of Engineers (Mike Bell), Department of Cultural Resources-State Historic Preservation Office (Debbie Bevin), U.S. Fish and Wildlife Service (Katherine Doak), North Carolina Wildlife Resource Commission (David Cox), Division of Environmental Management (Eric Galamb), and DEHNR - Highway Environmental Evaluation Program (David Foster).

Historic Architectural Resources Survey

A report entitled *Historic Architectural Resources Survey Report - Final Identification* was prepared by Scott Owen and is on file at NCDOT. This report contains additional information about the historic architectural resources located in the vicinity of the proposed improvements.

IMPROVEMENT A

IMPROVEMENT A
EXTENSION OF EXISTING MAIN ST EXT. TO THE PROPOSED U.S. 17 BYPASS

PURPOSE OF THE IMPROVEMENT

The purpose of the improvement is to provide efficient access to the Central Business District (CBD) of Elizabeth City from the Proposed U.S. 17 Bypass.

NEED FOR THE IMPROVEMENT

Motorist who are traveling thru Elizabeth City generate a substantial amount of revenue for businesses located in Elizabeth City. When the proposed U.S. 17 Bypass is opened, some of this traffic will be diverted away from the city and therefore, efficient access from the bypass to the CBD is essential to ensure the financial prosperity of merchants in Elizabeth City.

IMPROVEMENT OPTIONS

Improvement A

Improvement A shown in Figure C-1b begins near existing Shillington Road and proceeds southwest, terminating at the proposed U.S. 17 Bypass.

IMPACTS OF THE IMPROVEMENT

The environmental and social impacts that the proposed improvement would have are tabulated in Table C-1. The majority of the data was collected using the ARCVIEW software package maintained by NCDOT. The data found in NCDOT's ARCVIEW software package was obtained from the Center for Geographic Information and Analysis (CGIA). The remainder of the data was obtained using aerial photography and cursory field work.

TABLE C-1
IMPACT SUMMARY FOR IMPROVEMENT A

Note: Values in this table are based on estimated impacts for a 100 ft. R/W within the 500 ft. corridor.

Category	A
Length on new location (mi) Length on new location (km)	1.96 3.15
Number of Intersections w/ exist. roads	0
Estimated Relocations: Residential Business Farms (acres)	 1 0 22
Wetlands (acres) Source	0 NWI
Protected/Critical Watershed (acres)	0
High Quality Water Zones (acres)	0
Nurseries/Spawning Areas	0
Hydrologic Crossings: Normal Trout	 1 0
100 yr. Floodplain (acres)	0
Critical Habitats Special Natural Areas Natural Heritage Occurrences	0 0 0
Historic Sites (N.R. & Candidate) Historic District (N.R. & Candidate)	0 0
Archaeological Sites Archaeological Area	0 0
Cultural Resources: Schools Parks Churches Cemeteries Community Facilities	 0 0 0 0 0
Subdivision	0
Proposed Developments	0
Superfund Sites Landfills Groundwater Incidents NPDES Dischargers Non-discharge Systems	0 0 0 0 0

IMPROVEMENT B

IMPROVEMENT B
EXTENSION OF WALKER AVENUE TO ROANOKE AVENUE

PURPOSE OF THE IMPROVEMENT

The purpose of the improvement is to provide a more direct connection between Walker Avenue and Roanoke Avenue.

NEED FOR THE IMPROVEMENT

Motorist who are traveling down Walker Avenue and want to access Roanoke Avenue presently must take a right onto Brooks Avenue followed by a left onto Roanoke Avenue. If this improvement is constructed, the right turn onto Brooks Avenue would be eliminated.

IMPROVEMENT OPTIONS

Improvement B

Improvement B shown in Figure C-1a begins at the existing intersection of Walker Avenue and Brooks Avenue and proceeds almost due east terminating at the existing intersection of Roanoke Avenue and Tatem Street.

IMPACTS OF THE IMPROVEMENT

The environmental and social impacts that the proposed improvement would have are tabulated in Table C-2. The majority of the data was collected using the ARCVIEW software package maintained by NCDOT. The data found in NCDOT's ARCVIEW software package was obtained from the Center for Geographic Information and Analysis (CGIA). The remainder of the data was obtained using aerial photography and cursory field work.

TABLE C-2
IMPACT SUMMARY FOR IMPROVEMENT B

Note: Values in this table are based on estimated impacts for a 100 ft. R/W within the 500 ft. corridor.

Category	B
Length on new location (mi) Length on new location (km)	0.06 0.09
Number of Intersections w/ exist. roads	0
Estimated Relocations: Residential Business Farms (acres)	 2 0 0
Wetlands (acres) Source	0 NWI
Protected/Critical Watershed (acres)	0
High Quality Water Zones (acres)	0
Nurseries/Spawning Areas	0
Hydrologic Crossings: Normal Trout	 0 0
100 yr. Floodplain (acres)	0
Critical Habitats Special Natural Areas Natural Heritage Occurrences	0 0 0
Historic Sites (N.R. & Candidate) Historic District (N.R. & Candidate)	0 0
Archaeological Sites Archaeological Area	0 0
Cultural Resources: Schools Parks Churches Cemeteries Community Facilities	 0 0 0 0 0
Subdivision	0
Proposed Developments	0
Superfund Sites Landfills Groundwater Incidents NPDES Dischargers Non-discharge Systems	0 0 0 0 0

IMPROVEMENT C

IMPROVEMENT ALTERNATIVES C AND C REVISED EXTENSION OF SELBY ROAD WEST TO OAK STUMP ROAD AND EAST TO PEARTREE ROAD

PURPOSE OF THE IMPROVEMENT

The purpose of the improvement is to provide a more direct and efficient east-west route from U.S. 17 on the west side of Elizabeth City to N.C. 34 on the east side of Elizabeth City.

NEED FOR THE IMPROVEMENT

Northeastern High School is located on and accessed from Oak Stump Road. There are many times of the day that Oak Stump Road becomes congested due to the school traffic. If this route were built, many of the vehicles that presently travel north up Oak Stump Road and then proceed east on Halstead Blvd would instead choose the new route, thereby eliminating some of the congestion. In addition, the intersection of Oak Stump Road, U.S. 17 Bus., U.S. 17, and Hughes Blvd. is a complex intersection and the addition of this route would alleviate some of the vehicles that utilize this intersection, thereby making the intersection less congested and safer.

IMPROVEMENT OPTIONS

Improvement C

Improvement C is shown in Figure C-2. The first segment of the proposed route begins at the existing intersection of Oak Stump Road and Trinkaloe Road and proceeds southeast over to existing Selby Road. The second segment of the proposed route begins at the existing intersection of Body Road and Selby Road and proceeds southeast over to the existing intersection of Peartree Road and Perkins Lane.

Improvement C Revised

Improvement C Revised is shown in Figure C-2 Rev. It is identical to Improvement C except that the corridor is wider at the Oak Stump Road end of the Improvement. Since Improvement C Revised is only a minor modification of Improvement C, no impacts are tabulated.

IMPACTS OF THE IMPROVEMENT

The environmental and social impacts that the proposed improvement would have are tabulated in Table C-3. The

majority of the data was collected using the ARCVIEW software package maintained by NCDOT. The data found in NCDOT's ARCVIEW software package was obtained from the Center for Geographic Information and Analysis (CGIA). The remainder of the data was obtained using aerial photography and cursory field work.

TABLE C-3
IMPACT SUMMARY FOR IMPROVEMENT C

Note: Values in this table are based on estimated impacts for a 100 ft. R/W within the 500 ft. corridor.

Category	C
Length on new location (mi) Length on new location (km)	1.76 2.83
Number of Intersections w/ exist. roads	0
Estimated Relocations: Residential Business Farms (acres)	 1 0 18
Wetlands (acres) Source	1 NWI
Protected/Critical Watershed (acres)	0
High Quality Water Zones (acres)	0
Nurseries/Spawning Areas	0
Hydrologic Crossings: Normal Trout	 2 0
100 yr. Floodplain (acres)	0
Critical Habitats Special Natural Areas Natural Heritage Occurrences	0 0 0
Historic Sites (N.R. & Candidate) Historic District (N.R. & Candidate)	1(*) 0
Archaeological Sites Archaeological Area	0 0
Cultural Resources: Schools Parks Churches Cemeteries Community Facilities	 0 0 0 0 0
Subdivision	0
Proposed Developments	0
Superfund Sites Landfills Groundwater Incidents NPDES Dischargers Non-discharge Systems	0 0 0 0 0

* - Value changed from January 1996 package submitted to Environmental Resource Agencies because new information was discovered.

IMPROVEMENT BLACK

IMPROVEMENT ALTERNATIVES BLACK 1, BLACK 2, BLACK 3, AND BLACK 2 REVISED EXTENSION OF HALSTEAD BLVD FROM HUGHES BLVD. TO THE PROPOSED U.S. 17 BYPASS

PURPOSE OF THE IMPROVEMENT

The purpose of the improvement is to provide efficient access between the Central Business District (CBD) of Elizabeth City and the Proposed U.S. 17 Bypass.

NEED FOR THE IMPROVEMENT

Motorists who are traveling thru Elizabeth City generate a substantial amount of revenue for businesses located in Elizabeth City. When the proposed U.S. 17 Bypass is opened, some of this traffic will be diverted away from the city and therefore, efficient access from the bypass to the CBD is essential to ensure the financial well-being of merchants in Elizabeth City.

IMPROVEMENT OPTIONS

Improvement Black 1

Improvement Black 1 shown in Figures C-1a and C-1b begins at the existing intersection of Hughes Blvd. and Halstead Blvd. and proceeds northwest thru the Oxford Heights Subdivision. The road then turns almost due west, proceeding thru the Jaycee's Fairgrounds, and terminates at the Proposed U.S. 17 Bypass.

Improvement Black 2

Improvement Black 2 shown in Figures C-1a and C-1b begins at the existing intersection of Hughes Blvd. and Halstead Blvd. and proceeds almost due north, skirts the Oxford Heights Subdivision, then turns almost due west. The road then proceeds thru the northern edge of the Jaycee's Fairgrounds and terminates at the Proposed U.S. 17 Bypass.

Improvement Black 3

Improvement Black 3 shown in Figures C-1a and C-1b begins at the existing intersection of Hughes Blvd. and Halstead Blvd. and proceeds almost due north, skirting the Oxford Heights Subdivision, then turns down existing Church St. Extension. The improvement then proceeds in a southwesterly direction and terminates at the Proposed U.S.

17 Bypass.

Improvement Black 2 Revised

Improvement Black 2 Revised is shown in Figures C-1a Rev. and C-1b Rev. It is identical to Black 2 except that the corridor is wider in one section. Since Improvement Black 2 Revised is only a minor modification of Improvement Black 2, no impacts are tabulated.

IMPACTS OF THE IMPROVEMENT

The environmental and social impacts that the proposed improvement would have are tabulated in Table C-4. The majority of the data was collected using the ARCVIEW software package maintained by NCDOT. The data found in NCDOT's ARCVIEW software package was obtained from the Center for Geographic Information and Analysis (CGIA). The remainder of the data was obtained using aerial photography and cursory field work.

TABLE C-4
IMPACT SUMMARY FOR IMPROVEMENT BLACK

Notes:

1) Values in this table are based on estimated impacts for a 100 ft. R/W within the 500 ft. corridor.

2) Black 3 is shown proceeding down an existing road, however, only impacts from the new alignment portion are included in this table.

Category	Black 1	Black 2	Black 3
Length on new location (mi) Length on new location (km) Length on existing R/W (mi) Length on existing R/W (km)	3.16 5.09	3.30 5.32	2.55 4.10 0.86 1.39
Number of Intersections w/ exist. roads	3	2	1
Estimated Relocations: Residential Business Farms (acres)	 9 1 29	 2 2 33	 3 1 26
Wetlands (acres) Source	2 NWI	1 NWI	1 NWI
Protected/Critical Watershed (acres)	0	0	0
High Quality Water Zones (acres)	0	0	0
Nurseries/Spawning Areas	0	0	0
Hydrologic Crossings: Normal Trout	 3 0	 3 0	 3 0
100 yr. Floodplain (acres)	2	2	3(*5)
Critical Habitats Special Natural Areas Natural Heritage Occurrences	0 0 0	0 0 0	0 0 0
Historic Sites (N.R. & Candidate) Historic District (N.R. & Candidate)	0 0	0 0	0 0
Archaeological Sites Archaeological Area	0 0	0 0	0 0

TABLE C-4 (CONTINUED)
IMPACT SUMMARY FOR IMPROVEMENT BLACK (CONTINUED)

Category	Black 1	Black 2	Black 3
Cultural Resources:			
Schools	0	0	0
Parks	0	1(*2)	1(*2)
Churches	0	0	0
Cemeteries	0	0	0
Community Facilities	1(*1)	1(*1)	0
Subdivision	1	0	0
Proposed Developments	0(*3)	0(*3)	0
Superfund Sites	0	0	0
Landfills	0	0	0
Groundwater Incidents	0	0	0
NPDES Dischargers	0	0	1(*4)
Non-discharge Systems	0	0	0

*1 - The community facility is the Jaycee's Fairgrounds, which is owned by the Elizabeth City Jaycee's.

*2 - There is a registered plat stating that the park is on a parcel "reserved for highway."

*3 - The Elizabeth City Planning Department has knowledge of a property owner who is working on plans for a development. However, the plans have not been submitted to the city. For this reason, the development was not counted.

*4 - Groundwater Remediation Site - Gasoline

*5 - Value changed from January 1996 package submitted to Environmental Resource Agencies because new information was discovered.

IMPROVEMENT BLUE

IMPROVEMENT ALTERNATIVES BLUE 1a, BLUE 1b, BLUE 2a, BLUE 2b, BLUE 3, AND BLUE 3 REVISED THE EXTENSION OF EXISTING CREEK RD. SOUTH TO THE PROPOSED HALSTEAD BLVD. CONNECTOR (IMPROVEMENT BLACK 1, BLACK 2, BLACK 3, OR BLACK 2 REV.), THE EXTENSION OF EXISTING CREEK RD. NORTH TO EXISTING U.S. 17, AND THE EXTENSION OF EXISTING ELIZABETH ST. TO EXISTING MAIN ST. EXTENSION

PURPOSE OF THE IMPROVEMENT

The purpose of the improvement is to relieve traffic congestion on U.S. 17 from Halstead Blvd. to Culpepper Ln.

NEED FOR THE IMPROVEMENT

The segment of U.S. 17 from Halstead Blvd. to Culpepper Ln. is congested in 1995. In addition, if the only projects constructed between now and 2020 are the partially and fully funded projects in the 1996-2002 T.I.P., then conditions are projected to worsen significantly by 2020. The following table documents the volumes and capacities for 1995. In addition, the volume and capacity projections are tabulated for 2020 using the assumption that the partially and fully funded projects in the 1996-2002 T.I.P. will be constructed.

Street Segment	1995 volume	1995 capacity	2020 volume	2020 capacity
Halstead Blvd to Church St.	18000	26000	26000	26000
Church St to Main St	24000	20000	31000	20000
Main St to Elizabeth St	22000	20000	27000	20000
Elizabeth St to Road St	19000	20000	24000	20000
Road to South side of bridge	28000	20000	39000	20000
Bridge over Knobbs Creek	30000	40000	39000	40000
N side brg to Coll of Albem S Ent	30000	26000	39000	26000
Coll of Albem S Ent to Whitehurst	22100	20000	29000	26000
Whitehurst Ln to Hastings Ln	22100	26000	29000	26000
Hastings Ln to Culpepper Ln	22100	20000	29000	26000

IMPROVEMENT OPTIONS

Improvements Considered But Not Pursued
Widening existing U.S. 17 to a six lane divided section

In order to provide adequate capacity on U.S. 17 in the year 2020 using widening alone, the road would have to be widened to a six lane divided section. A cursory survey

revealed that to construct this improvement, approximately 30 residences and 30 businesses would have to be relocated. In addition, many of the remaining businesses would have a portion of their parking removed and access would be restricted to all businesses. For these reasons, this option did not appear to be a viable option to pursue.

Improvement Blue 1a

Improvement Blue 1a shown in Figure C-1a begins at the intersection of existing Church St. Extension and the proposed Halstead Blvd. Connector (Improvement Black 3) and proceeds northwest, terminating at existing Creek Rd.

Improvement Blue 1b

Improvement Blue 1b begins at the proposed Halstead Blvd. Connector (Black 1, Black 2, or Black 2 Rev.). The road proceeds northeast crossing Church St. Extension, then continues northwest terminating at Creek Rd. See Figures C-1a and C-1a Rev. for graphic illustrations of this Improvment.

Improvement Blue 2a

Improvement Blue 2a shown in Figure C-1a begins near the intersection of Creek Rd. and Pot of Gold Trail and proceeds northeast and crosses Knobbs Creek using the existing roadway as much as possible. The road then turns northwest and terminates at U.S. 17.

Improvement Blue 2b

Improvement Blue 2b shown in Figure C-1a begins near the intersection of Creek Rd. and Pot of Gold Trail and proceeds northeast and crosses Knobbs Creek using the existing roadway as much as possible. The road then turns almost due north and terminates at U.S. 17.

Improvement Blue 3

Improvement Blue 3 shown in Figure C-1a begins near the existing intersection of U.S. 17 and Elizabeth St. and proceeds northwest between two businesses, then turns almost due west and terminates at existing Main Street Extension.

Improvement Blue 3 Revised

Improvement Blue 3 Revised is shown in Figure C-1a Rev. It is identical to Improvement Blue 3 except that a portion of Main Street Extension was realigned. Since Blue 3 Revised is only a minor modification of Blue 3, no impacts are tabulated.

IMPACTS OF THE IMPROVEMENT

The environmental and social impacts that the proposed improvement would have are tabulated in Table C-5. The majority of the data was collected using the ARCVIEW software package maintained by NCDOT. The data found in NCDOT's ARCVIEW software package was obtained from the Center for Geographic Information and Analysis (CGIA). The remainder of the data was obtained using aerial photography and cursory field work.

TABLE C-5
IMPACT SUMMARY FOR IMPROVEMENT BLUE

Notes:

1) Values in this table are based on estimated impacts for a 100 ft. R/W within the 500 ft. corridor.

2) Blue 2a and Blue 2b are shown proceeding down an existing road, however, only impacts from the new alignment portion are included in this table.

Category	Blue 1a	Blue 1b	Blue 2a	Blue 2b	Blue 3
Length on new location (mi)	0.70	0.89	1.51	1.42	0.76
Length on new location (km)	1.13	1.43	2.44	2.29	1.22
Length on existing R/W (mi)	0	0	0.19	0.19	0
Length on existing R/W (km)	0	0	0.30	0.30	0
Number of Intersections w/ exist. roads	1	2	0	0	1
Estimated Relocations:					
Residential	4	4(*1)	1	1	2
Business	0	0	0	5	0
Farms (acres)	6	8	13	11	3
Wetlands (acres)	4	2	4	6	4
Source	NWI	NWI	NWI	NWI	NWI
Protected/Critical Watershed (acres)	0	0	0	0	0
High Quality Water Zones (acres)	0	0	0	0	0
Nurseries/Spawning Areas	0	0	0	0	1
Hydrologic Crossings:					
Normal	0	0	0	1	1
Trout	0	0	0	0	0
100 yr. Floodplain (acres)	2	2	4(*3)	4(*3)	7
Critical Habitats	0	0	0	0	0
Special Natural Areas	0	0	0	0	0
Natural Heritage Occurrences	0	0	0	0	0
Historic Sites (N.R. & Candidate)	0	0	0	0	1(*3)
Historic District (N.R. & Candidate)	0	0	0	0	0
Archaeological Sites	0	0	0	0	0
Archaeological Area	0	0	0	0	0

TABLE C-5 (CONTINUED)
IMPACT SUMMARY FOR IMPROVEMENT BLUE (CONTINUED)

Category	Blue 1a	Blue 1b	Blue 2a	Blue 2b	Blue 3
Cultural Resources:					
Schools	0	0	0	0	0
Parks	0	0	0	0	0
Churches	0	0	0	0	0
Cemeteries	1(*2)	1(*2)	0	0	0
Community Facilities	0	0	0	0	0
Subdivision	0	0	0	0	0
Proposed Developments	0	0	0	0	0
Superfund Sites	0	0	0	0	0
Landfills	0	0	0	0	0
Groundwater Incidents	0	0	0	0	0
NPDES Dischargers	0	0	0	0	0
Non-discharge Systems	0	0	0	0	0

*1 - At the intersection of Blue 1b and Black 1, no relocations were included since they will be included in the impacts of Black 1.

*2 - Westlawn Cemetery does fall in the 500 ft. corridor, however, there is adequate flexibility in the area to avoid it.

*3 - Value changed from January 1996 package submitted to Environmental Resource Agencies because new information was discovered.

IMPROVEMENT RED

IMPROVEMENT ALTERNATIVES RED 1, RED 2a, RED 2b, RED 2c, RED 2d, RED 2e, AND RED 3
THE EXTENSION OF EXISTING CREEK RD. SOUTH TO THE PROPOSED HALSTEAD BLVD. CONNECTOR (IMPROVEMENT BLACK 1, BLACK 2, OR BLACK 3), THE EXTENSION OF EXISTING ELIZABETH ST. TO EXISTING U.S. 17, AND THE EXTENSION OF EXISTING MAIN ST. EXTENSION TO THE PROPOSED ELIZABETH ST. EXT. (IMPROVEMENT RED 2a, RED 2b, RED 2c, RED 2d, OR RED 2e).

PURPOSE OF THE IMPROVEMENT

The purpose of the improvement is to relieve traffic congestion on U.S. 17 from Halstead Blvd. to Culpepper Ln.

NEED FOR THE IMPROVEMENT

The segment of U.S. 17 from Halstead Blvd. to Culpepper Ln. is congested in 1995. In addition, if the only projects constructed between now and 2020 are the partially and fully funded projects in the 1996-2002 T.I.P., then conditions are projected to worsen significantly by 2020. The following table documents the volumes and capacities for 1995. In addition, the volume and capacity projections are tabulated for 2020 using the assumption that the partially and fully funded projects in the 1996-2002 T.I.P. will be constructed.

Street Segment	1995 volume	1995 capacity	2020 volume	2020 capacity
Halstead Blvd to Church St	18000	26000	26000	26000
Church St to Main St	24000	20000	31000	20000
Main St to Elizabeth St	22000	20000	27000	20000
Elizabeth St to Road St	19000	20000	24000	20000
Road to South side of bridge	28000	20000	39000	20000
Bridge over Knobbs Creek	30000	40000	39000	40000
N side brg to Coll of Albem S Ent	30000	26000	39000	26000
Coll of Albem S Ent to Whitehurst	22100	20000	29000	26000
Whitehurst Ln to Hastings Ln	22100	26000	29000	26000
Hastings Ln to Culpepper Ln	22100	20000	29000	26000

IMPROVEMENT OPTIONS

Improvements Considered But Not Pursued
Widening existing U.S. 17 to a six lane divided section

In order to provide adequate capacity on U.S. 17 in the

year 2020 using widening alone, the road would have to be widened to a six lane divided section. A cursory survey revealed that to construct this improvement, approximately 30 residences and 30 businesses would have to be relocated. In addition, many of the remaining businesses would have a portion of their parking removed and access would be restricted to all businesses. For these reasons, this option did not appear to be a viable option to pursue.

Improvement Red 1

Improvement Red 1 shown in Figure C-1a begins at the proposed Halstead Blvd. Connector (Improvement Black 1, Black 2, or Black 3), proceeds almost due north, then turns northeast to avoid a heavily developed residential area, then turns almost due north at the Westlawn Memorial Park, terminating at Creek Rd.

Improvement Red 2a

Improvement Red 2a shown in Figure C-1a begins near the existing intersection of U.S. 17 and Elizabeth St. and proceeds almost due north until it nears the Pine Lakes Country Club Golf Course where it turns and proceeds northeast, terminating at U.S. 17.

Improvement Red 2b

Improvement Red 2b shown in Figure C-1a begins near the existing intersection of U.S. 17 and Elizabeth St. and proceeds almost due north until it nears the Pine Lakes Country Club Golf Course where it turns and proceeds northeast, following existing Hastings Ln. and terminating at U.S. 17.

Improvement Red 2c

Improvement Red 2c shown in Figure C-1a begins near the existing intersection of U.S. 17 and Elizabeth St. and proceeds almost due north, then turns northeast and follows existing Barney Ln. terminating at U.S. 17.

Improvement Red 2d

Improvement Red 2d shown in Figure C-1a begins near the existing intersection of U.S. 17 and Elizabeth St. and proceeds almost due north, then turns northeast and terminates at existing U.S. 17.

Improvement Red 2e

Improvement Red 2e shown in Figure C-1a begins near the existing intersection of U.S. 17 and Elizabeth St. and proceeds almost due north, then turns northeast to minimize

impacts to the Pine Lakes Country Club Golf Course, and terminates at existing U.S. 17.

Improvement Red 3

Improvement Red 3 shown in Figure C-1a begins at existing Main Street Extension and proceeds almost due east terminating at either proposed Red 2a, Red 2b, Red 2c, Red 2d, or Red 2e.

IMPACTS OF THE IMPROVEMENT

The environmental and social impacts that the proposed improvement would have are tabulated in Table C-6. The majority of the data was collected using the ARCVIEW software package maintained by NCDOT. The data found in NCDOT's ARCVIEW software package was obtained from the Center for Geographic Information and Analysis (CGIA). The remainder of the data was obtained using aerial photography and cursory field work.

TABLE C-6
IMPACT SUMMARY FOR IMPROVEMENT RED

Notes:

1) Values in this table are based on estimated impacts for a 100 ft. R/W within the 500 ft. corridor.

2) Red 1, Red 2b, and Red 2c are shown proceeding down an existing road, however, only impacts from the new alignment portion are included in this table.

Category	Red 1	Red 2a	Red 2b	Red 2c	Red 2d	Red 2e	Red 3
Length on new location (mi)	0.79	2.19	2.01	1.80	2.18	2.18	0.42
Length on new location (km)	1.28	3.52	3.23	2.90	3.51	3.51	0.67
Length on existing R/W (mi)	0.08	0	0.19	0.19	0	0	0
Length on existing R/W (km)	0.12	0	0.30	0.30	0	0	0
Number of Intersections w/ exist. roads	1(*1) 2(*2)	1	4	3	1	1	0
Estimated Relocations:							
Residential	2	7	1	2	3	2	2
Business	0	2	1	1	1	2	0
Farms (acres)	4	8	9	8	9	8	3
Wetlands (acres)	3	9	10	11	11	15	2
Source	NWI	NWI	NWI	NWI	NWI	NWI	NWI
Protected/Critical Watershed (acres)	0	0	0	0	0	0	0
High Quality Water Zones (acres)	0	0	0	0	0	0	0
Nurseries/Spawning Areas	0	1	1	1	1	1	1
Hydrologic Crossings:							
Normal	0	1	1	1	1	1	1
Trout	0	0	0	0	0	0	0
100 yr. Floodplain (acres)	3	17 (*6)	17 (*6)	20 (*6)	17 (*6)	18 (*6)	5
Critical Habitats	0	0	0	0	0	0	0
Special Natural Areas	0	0	0	0	0	0	0
Natural Heritage Occurrences	0	0	0	0	0	0	0
Historic Sites (N.R. & Candidate)	0	1(*6)	1(*6)	1(*6)	1(*6)	1(*6)	0
Historic District (N.R. & Candidate)	0	0	0	0	0	0	0
Archaeological Sites	0	0	0	0	0	0	0
Archaeological Area	0	0	0	0	0	0	0

TABLE C-6 (CONTINUED)
IMPACT SUMMARY FOR IMPROVEMENT RED (CONTINUED)

Category	Red 1	Red 2a	Red 2b	Red 2c	Red 2d	Red 2e	Red 3
Cultural Resources:							
Schools	0	0	0	0	0	0	0
Parks	0	0	0	0	0	0	0
Churches	0	0	0	0	0	0	0
Cemeteries	1(*3)	0	0	0	0	0	0
Community Facilities	0(*1),1(*4)	0	0	0	1(*5)	0	0
Subdivision	0	0	0	0	0	0	0
Proposed Developments	0	0	0	0	0	0	0
Superfund Sites	0	0	0	0	0	0	0
Landfills	0	0	0	0	0	0	0
Groundwater Incidents	0	0	0	0	0	0	0
NPDES Dischargers	0	0	0	0	0	0	0
Non-discharge Systems	0	0	0	0	0	0	0

*1 - If Black 3 is selected

*2 - If Black 1 or Black 2 is selected

*3 - Westlawn Cemetery does fall in the 500 ft. corridor, however, there is adequate flexibility in the area to avoid it.

*4 - If Black 1 or Black 2 is selected, the proposed improvement would encroach on the Jaycee's Fairgrounds, which is owned by the Elizabeth City Jaycee's.

*5 - Community facility is VFW

*6 - Value changed from January 1996 package submitted to Environmental Resource Agencies because new information was discovered.

Consensus Charter
Elizabeth City Thoroughfare Plan

The North Carolina Department of Transportation has worked with the regulatory and resource agencies to develop a methodology to address environmental concerns during the thoroughfare planning process. This methodology is being referred to as a "phased environmental study". It's goal is to, where possible, identify environmentally preferred corridors to be shown on thoroughfare plans.

As these transportation solutions are funded, detailed environmental studies will be conducted on the preferred corridor for each project. Should the detailed studies reveal new information, unanticipated impacts, or should law/rule changes require it, alternate corridors will be re-examined.

The undersigned agencies have worked together on the Elizabeth City Thoroughfare Plan to identify a number of environmentally preferred corridors for future transportation solutions. For consistency, these environmentally preferred corridors have been labeled:

- Improvement "A" (TIP# U-3420)
- Improvement "B" (Walker Ave. Ext.)
- Improvement "C" revised (Selby Rd. Ext.)
- Black "2" revised (TIP# U-3449)
- Blue "1b" (Creek Rd. Ext.)
- Blue "2a" (Creek Rd. Ext.)
- Blue "3" revised (Elizabeth St. Ext.)

While we have worked to achieve consensus on these environmentally preferred corridors, this consensus is subject to the attached comments by several agencies. The agencies which attached comments and/or conditions are marked with an asterisk (*).

The Town of Elizabeth City shall, to the extent possible, protect the preferred corridors so that development does not foreclose the viability of the preferred corridors.

John Dorney
NC Div. of Environmental Management*, DEHNR

Frank McBride
NC Wildlife Resources Commission*

See attached letter
Mike Smith
US Army Corps of Engineers*

Katherine Doak
US Fish & Wildlife Service*

Kay Batey
Federal Highway Administration

David Brook
NC Department of Cultural Resources*

Doug Huggett
NC Division of Coastal Management*, DEHNR

6/24/96
for Sara Winslow
NC Division of Marine Fisheries*, DEHNR

Larry Hardy
National Marine Fisheries*

Carol Tingley
for Phil McKnelly
NC Division of Parks & Rec.*, DEHNR

Marion R. Poole
Statewide Planning Branch, NCDOT

H. Rick Gardner
Mayor, Elizabeth City

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Water Quality

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
A. Preston Howard, Jr., P.E., Director

DEHNR

October 16, 1996

Mr. Blake Norwood
NC DOT - Statewide Planning
P. O. Box 25201
Raleigh, North Carolina 27611 - 5201

Subject: Consensus Letter for the Elizabeth City Thoroughfare Plan
Pasquotank County

Dear Mr. Norwood:

The Division of Water Quality (DWQ) has reviewed the Consensus Charter for the Elizabeth City Thoroughfare Plan. An on-site meeting occurred on February 6, 1996 and a follow-up coordination meeting on February 13, 1996. The DWQ supports a method that addresses environmental concerns early in the planning process. DWQ believes that improvements A, B, C, blue lb, blue 2a should have minimal impact to wetlands and water quality. However, DWQ remains concerned about the black 2 revised and blue 3 revised corridors.

The black 2 revised corridor (Tip No U-3449) crosses Knobb Creek and its wetlands on new location. This wetland is a semi-permanently flooded, high quality cypress-gum swamp that is providing significant functions. These functions include pollutant removal, water storage, bank stabilization, aquatic, and wildlife habitat.

DWQ could concur with this corridor if wetland and water avoidance/minimization efforts were employed such as complete bridging of the wetlands, not placing bridge bents in the body of water and designing the bridge such that no weep holes drain directly into water. Should curb and gutter be constructed, the stormwater energy will need to be dissipated before it enters the wetland. Measures such as energy dissipators at the wetland end of curb and gutter would be appropriate. Otherwise the stormwater will cut channels through the wetland and the water quality functions of the wetland will not be completely utilized. Stormwater treatment may be necessary.

The blue 3 revised corridor also impacts the same wetland complex of Knobbs Creek as does the black 2 revised corridor. These wetlands are performing the same functions as previously described.

DWQ could concur with this new crossing corridor if the existing filled crossing is removed and restored. The crossing will need to be bridged due to the high quality nature of the wetlands and especially the anadromous fish spawning uses of this wetland. The other issues (bents, weep holes, curb and gutters) described above also apply to this crossing.

Environmental Sciences Branch • 4401 Reedy Creek Road • Raleigh, North Carolina 27607
Telephone 919-733-9960 FAX # 733-9959

If field work reveals additional information, DWQ reserves the right to recommend that other corridors/alternatives be evaluated. Our endorsement of these corridors is based on the best available information without extensive field work.

Should you have any questions, please contact Eric Galamb at 733-1786.

Sincerely,

John R. Dorney
Environmental Supervisor

JRD/EG/gh
norwood. ltr

cc: David Foster
Mike Bell, Washington COE
Kay Batey, FHWA
David Cox, WRC
John Hefner, USFWS

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

REPLY TO
ATTENTION OF

August 22, 1996

Regulatory Branch

SUBJECT: Action ID 19961460

Mr. David B. Foster
North Carolina Department of Environment,
Health and Natural Resources
Highway Environmental Evaluation
Archdale Building, Room 1419-A
Post Office Box 27687
Raleigh, North Carolina 27611

Dear Mr. Foster:

Please reference your recent request for a letter concurring with the North Carolina Department of Transportation's selection of preferred corridors for the Elizabeth City Thoroughfare Plan, in Pasquotank County, North Carolina.

It is highly likely that the Corps of Engineers will be asked to issue a Clean Water Act permit for work connected with the projects described in the Phase I Environmental Review of the Elizabeth City Thoroughfare Plan. Our permit program requires that we make a complete, thorough, and unbiased review of all factors associated with a proposed project within jurisdictional waters of the United States. A major component of that review is the consideration of reasonable and practicable alternatives, required by both the National Environmental Policy Act, and the Clean Water Act 404 (b)(1) guidelines (33 U.S.C.Section 1344(b); 40 CFR Section Part 230). The Clean Water Act requires that individual permit decisions be made "after notice and opportunity for public hearings" (33 U.S.C. Section 1344(a)). Based on these requirements, we believe it is inappropriate for the Wilmington District to make any binding commitment concerning the selection of a single preferred alternative prior to going through the permit process required by our regulations, found at 33 CFR Part 325.

The District can, however, review, comment, and make recommendations in the planning review of alternative corridors with reference to potential Department of the Army permit concerns. As a result of our continued coordination, we continue to support the final choice of preferred corridors as reflected in the consensus charter, subject to the conditions and comments from the State and Federal commenting agencies.

Should you have any questions, please contact Mr. Michael F. Bell, Project Manager/North Carolina Department of Transportation Coordinator, of my Washington Regulatory Field Office staff, at telephone (919) 975-1616, extension 26.

Sincerely,

Michael D. Smith, P.W.S.
Chief, North Section
Regulatory Branch

Copies Furnished:

Mr. John Parker
Division of Coastal Management
North Carolina Department of
Environment, Health and
Natural Resources
Post Office Box 27687
Raleigh, North Carolina 27611

Mr. Larry Hardy
National Marine Fisheries
Service
Pivers Island
Beaufort, North Carolina 28516

Mr. John M. Hefner
U.S. Fish and Wildlife Service
Fish and Wildlife Enhancement
Post Office Box 33726
Raleigh, North Carolina 27636

Mr. Thomas Welborn, Chief
U.S. Environmental Protection
Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Mr. John Dorney
North Carolina Division
of Environmental Management
Water Quality Section
Wetlands and Aquatic Plants
4401 Reedy Creek Road
Raleigh, North Carolina 27607

Mr. Nicholas Graf
Federal Highway Administration
310 New Bern Avenue, Suite 410
Raleigh, North Carolina 27601

Mr. David Cox
Post Office Box 118
Northside, North Carolina 27564

State of North Carolina
Department of Environment, Health, and Natural Resources
Division of Coastal Management
P.O. Box 27687 • Raleigh, North Carolina 27611-7687

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary

Roger N. Schecter
Director

March 6, 1996

MEMO TO: David Foster

FROM: Doug Huggett
Division of Coastal Management

SUBJECT: Elizabeth City Thoroughfare Review

Staff members from DCM's Elizabeth City office have participated in a review of proposed alignments for the referenced NCDOT project. It has been determined that only the red a, b, c, d, and e alignments and the red 3 and blue 3 alignments will fall within a Coastal Area Management Act (CAMA) Area of Environmental Concern (AEC). All of these proposed segments will fall within the Public Trust Water AEC resources of Knobbs Creek. Division staff have not expressed any preferences of any one alignment over the others from a CAMA AEC perspective. It is requested that, when project design begins for any public trust crossings, every effort be made to maintain the traditional and existing navigational usages of Knobbs Creek.

With regards to alignments which fall outside of CAMA AEC's, the Division encourages the Department of Transportation to utilize alignments that avoid and minimize impacts areas of sensitive wetlands. In this regard, the Division defers to and supports the comments of the Division of Environmental Management, Wildlife Resources Commission, US Army Corps of Engineers and US Fish and Wildlife Service.

I would like to ask for the consideration of a minor procedural change on future projects. The Division of Coastal Management will likely have a staff member in Raleigh and a member of the field office reviewing and commenting on a project. It has become apparent that one information package (maps, narratives, etc.) will not allow for both Raleigh and field staff to adequately review the project. It is therefore requested that a second package be provided to DCM in the future.

It must be pointed out that the submittal of these comments does not preclude the raising of additional questions or concerns later in the review and/or permit processes. However, the

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up-front coordination that is being implemented in this process is applauded, and will definitely reduce environmental conflicts later in the DOT planning process, and all parties are encouraged to continue with this procedure on this and all other projects.

The Division appreciates being given the opportunity to participate in this process. If you have any questions concerning these comments, please feel free to contact me at (919) 733-2293.

cc: Frank Jennings, DCM-Elizabeth City
Dennis Hawthorn, DCM-Elizabeth City

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Beaufort Field Branch
101 Pivers Island Road
Beaufort, North Carolina 28516

February 8, 1996

Mr. R. Van Argabright
N.C. Department of Transportation
Statewide Planning Branch
P. O. Box 25201
Raleigh, North Carolina 27611-5201

Dear Mr. Argabright:

Please reference your January 18, 1996, memorandum requesting our comments on the Phase I Environmental Review of Elizabeth City Thoroughfare Plan, Pasquotank County, North Carolina. We have reviewed the information provided and offer the following comments for your consideration.

The Pasquotank River and its tributaries, including Knobbs Creek, provide important habitat for anadromous fishery resources for which we are responsible. Wooded wetlands associated with these water bodies would be impacted by most of the alternatives under consideration. These wetlands function to maintain good water quality necessary for continued fishery production and are important not only in the immediate project area but also downstream in the Albemarle Sound estuarine system. Therefore, we believe that potential impacts to wetlands and fishery resources should play an important role in the selection of alternative highway corridors.

We concur with your assessment that the corridors for Improvements A, B, and C are the most desirable from an environmental perspective. However, consideration of the overall environmental impacts of the Black, Red, and Blue Alternative packages was more complex. Based on our review, we believe that a project comprised of Black 2, Blue 3, Blue 1b, and Blue 2a will have the least adverse impact on wetlands and fisheries.

Thank you for the opportunity to provide these comments early in the project planning process. We look forward to further coordination in this matter.

Sincerely,

Larry H. Hardy
Branch Chief
Habitat Conservation Division

cc: FWS, ATLA, GA
FWS, Raleigh, NC
EPA, ATLA, GA
NCDEHNR, Raleigh, NC
NCDEHNR, Morehead City, NC
COE, Wilmington, NC
F/SEO21

North Carolina Wildlife Resources Commission

512 N. Salisbury Street, Raleigh, North Carolina 27604-1188, 919-733-3391
Charles R. Fullwood, Executive Director

MEMORANDUM

TO: Van Argabright
Statewide Planning Branch, NCDOT

FROM: Franklin T. McBride, Manager
Habitat Conservation Program

DATE: May 21, 1996

SUBJECT: Comments on the alternatives included in the Elizabeth City Thoroughfare Plan

This memorandum restates our position on the alternatives for the improvements included in the Elizabeth City Thoroughfare Plan. We attended the coordination meeting held on February 13, 1996.

Our position is as follows:

1. We concur with Improvement A.
2. We concur with Improvement B.
3. We concur with Improvement C.
4. We concur with Black 2 revised, provided that the high quality swamp at the eastern project terminus is bridged and the existing fill causeway is removed and restored. If these measures are not feasible, we will ask that other alternatives be evaluated.
5. We concur with improvement Blue 1b.
6. We concur with improvement Blue 2a.
7. We concur with improvement Blue 3 revised, provided that the high quality swamp along Knobbs Creek is bridged and the existing causeway is removed and restored. If these measures are not feasible, we will ask that other alternatives be evaluated.

Our endorsement of these alternatives is based on the information provided to us by NCDOT during the Phased Environmental study. Our position may change if new information reveals less environmentally damaging alternatives, if endangered or threatened species may be adversely affected, or if laws or regulations change.

Thank you for the opportunity to provide input in the early planning stages for this thoroughfare plan. If we can further assist your office, please contact David Cox, Highway Project Coordinator, at (919) 528-9886.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

April 11, 1996

Mr. David B. Foster
Statewide Planning
N.C. Department of Transportation
P.O. Box 25201
Raleigh, NC 27611-5201

Re: Action ID No. 199601460, Elizabeth City Thoroughfare Plan
Pasquotank County, North Carolina

Dear Mr. Foster:

The U.S. Fish and Wildlife Service (Service) has reviewed the Consensus Charter for the above-referenced project and is responding to your request for concurrence with the document. This is the report of the Department of the Interior submitted in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). This report also serves as initial comments to state resource agencies in their permitting and/or certification processes.

The Service attended an on-site interagency meeting on February 6, 1996 as well as a follow up coordination meeting on February 13, 1996. Much discussion has taken place regarding the choice of corridors and the conditions under which they would be environmentally preferred. We support the methodology to address environmental concerns early in the planning process. If resource agency recommendations are incorporated at an early stage, all agencies should benefit through a more efficient and effective environmental review process.

The February 13th coordination meeting discussion was recorded on tape by the N.C. Department of Transportation (NCDOT). Service recommendations made at that meeting remain valid. In addition, these written comments should accompany the Consensus Charter and represent our conditional approval of the selected "environmentally preferred corridors". The following corridors discussed match those referenced in the Consensus Charter and depicted on the revised drawings.

Improvement "A": This corridor appears to be environmentally preferred based on minimal anticipated impacts to fish and wildlife resources.

Improvement "B": This corridor appears to be environmentally preferred based on minimal anticipated impacts to fish and wildlife resources.

Improvement "C": This corridor is acceptable provided the alignment chosen avoids and minimizes wetland impacts and habitat fragmentation to the maximum extent practicable. A

section of the corridor has been widened so that alternative alignments would be available to avoid impacts to palustrine forested wetlands in this location.

Black "2" revised: This corridor crosses a tributary of Knobbs Creek on new location. This crossing would impact semipermanently flooded cypress-gum swamp which is a highly valued resource type that performs a number of ecological functions, including the provision of fish and wildlife habitat. There are several existing crossings of this tributary within the near vicinity of the proposed crossing already. We would agree to an additional crossing on new alignment provided the crossing occurs on structure for the entire length of the floodplain. Our acceptance of this corridor as environmentally preferred is contingent upon this specified condition. Otherwise, we recommend that NCDOT pursue an upgrade of an existing road crossing downstream of the proposed corridor, potentially at Church Street, the abandoned railroad bed or some other location. In addition, opportunities to restore existing crossings to pre-fill contours should be incorporated into the compensatory mitigation plan for this project, i.e. the subdivision crossing upstream, the abandoned railroad bed or any other suitable location. The NCDOT should strive for a no net increase in road crossings and a no net loss in wetland acreage.

Blue "1b": This corridor is acceptable provided the alignment chosen crosses this palustrine forested wetland system at a narrow section of the tributary and occurs on structure to the maximum extent practicable.

Blue "2a": This corridor is environmentally preferred because it represents an upgrade of an existing crossing of Knobbs Creek, thereby impacting wetlands previously disturbed and minimizing habitat fragmentation. Median width in this location should be negligible. The existing bridge should be extended in length to minimize fill within the floodplain. An opportunity for compensatory mitigation credit exists here if the bridge is extended and part or all of the existing crossing is restored to pre-fill contours.

Blue "3": This corridor crosses a tributary of Knobbs Creek on new location. As is the case with Black "2" revised, the resources in this area include semipermanently flooded cypress-gum swamp, a highly valued resource. There is an existing crossing of this tributary directly adjacent to and upstream of the proposed corridor. We would agree to an additional crossing on new alignment provided the crossing occurs on structure for the entire length of the floodplain and the "T" intersection does not overlap into wetland boundaries. Our acceptance of this corridor as environmentally preferred is contingent upon this specified condition. Otherwise, we recommend that NCDOT pursue an upgrade of the adjacent existing road crossing upstream of the proposed corridor. Opportunities to restore existing crossings, such as the one directly adjacent to the proposed, to pre-fill contours should be

incorporated into the compensatory mitigation plan.

When committing to a corridor choice, it is productive for the agencies to discuss design issues that serve to avoid and minimize impacts. Corridor approval is often contingent upon certain design specifications. It is also useful to identify potential compensatory mitigation sites in advance. Several sites were identified in the field that seem to offer the opportunity for meaningful in-kind, on-site restoration to compensate for unavoidable wetland impacts.

If NCDOT incorporates this guidance into planning and design of this project, the environmental documentation and permitting process would be streamlined to save both time and money as well as foster enhanced resource protection.

We reserve the right to review and comment upon any required federal or state permits at the time of public notice issuance.

The Service appreciates the opportunity to comment on this project. If you have any questions regarding this information, please contact Katherine Doak of my staff at (919) 856-4520 ext. 19.

Sincerely yours,

John Hefner
Field Supervisor

JH/KHD

cc: COE (Mike Bell)
NMFS (Ron Sechler)
NCDEHNR-DEM (Eric Galamb)
NCDEHNR-DCM (Richard Watts)
NCWRC (David Cox)
NCDOT (R. Van Argabright)

FWS/R4/KDoak/KHD:4-11-96/919-856-4520 ext 19/wp:19961460.CON

North Carolina Department of Cultural Resources

ames B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

November 7, 1996

MEMORANDUM

TO: Van Arbabright
Division of Highways
Department of Transportation

FROM: David Brook
Deputy State Historic Preservation Officer

SUBJECT: Elizabeth City Thoroughfare Plan,
Pasquotank County, ER 97-7658

Thank you for your letter of October 23, 1996, concerning the above project.

We have reviewed the consensus charter for Elizabeth City outlining the recommended preferred corridors for the Elizabeth City Thoroughfare Plan. We are in agreement with the preferred corridors as long as the following issues related to historic architectural resources are resolved prior to project implementation.

Improvement C Revised (Selby Road Extension)

> The National Register-eligible William Thurston Jackson Farm and Eugene S. Scott House are located within the corridor for Improvement C. Final boundaries for the Eugene S. Scott House need to be determined. The design for Corridor C should avoid adversely affecting the properties.

Blue 3 Revised (Elizabeth Street Extension)

> The National Register-eligible Elizabeth City Cotton Mill is located within the Blue 3 corridor, and the National Register-listed Elizabeth City Historic District is located several blocks east of the terminus of Blue 3. The design for Blue 3 should avoid adversely affecting these properties.

We are aware of no historic properties within the recommended preferred corridors for Improvement A (TIP #U-3420), Improvement B (Walker Avenue Extension), Black 2 revised (TIP #U-3449), Blue 1b (Creek Road Extension), or Blue 2a (Creek Road Extension).

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

109 East Jones Street • Raleigh, North Carolina 27601-2807

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

DB:slw

cc: H. V. Vick
B. Church
Elizabeth City Historic District Commission

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Marine Fisheries

James B. Hunt, Jr., Governor
Jonathan B: Howes, Secretary
Bruce L. Freeman, Director

DEHNR

MEMORANDUM:

TO: Van Argabright, NCDOT Statewide Planning Branch

THROUGH: P. Wojciechowski

FROM: Sara E. Winslow, Biologist Supervisor

SUBJECT: Phase I Environmental Review of Elizabeth City Thoroughfare Plan

DATE: January 30, 1996

The North Carolina Division of Marine Fisheries has reviewed the Phase I Thoroughfare Plan and submits the following comments.

This agency supports the corridors as denoted for Improvement A, B, and C. Improvement Black 2 or Black 3 would be preferred by the Division. Based on the information supplied in the package, this agency prefers Improvement Blue. This would automatically get Blue 3. Blue 2a would be preferred over Blue 2b. The impacts and the loss of wetlands associated with these improvements should receive proper mitigation.

The Division appreciates the opportunity to provide comments. If you have any questions, feel free to contact me (1-800-338-7805).

P.O. Box 769, Morehead City, North Carolina 28557-0769 Telephone 919-726-7021 FAX 919-726-0254

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Parks & Recreation

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
Dr. Philip K. McKnelly, Director

DEHNR

June 11, 1996

MEMORANDUM

TO: David B. Foster
N.C. Department of Transportation Liaison

FROM: for Philip McKnelly C Tingley

SUBJECT: Consensus Charter -- Elizabeth City Thoroughfare Plan

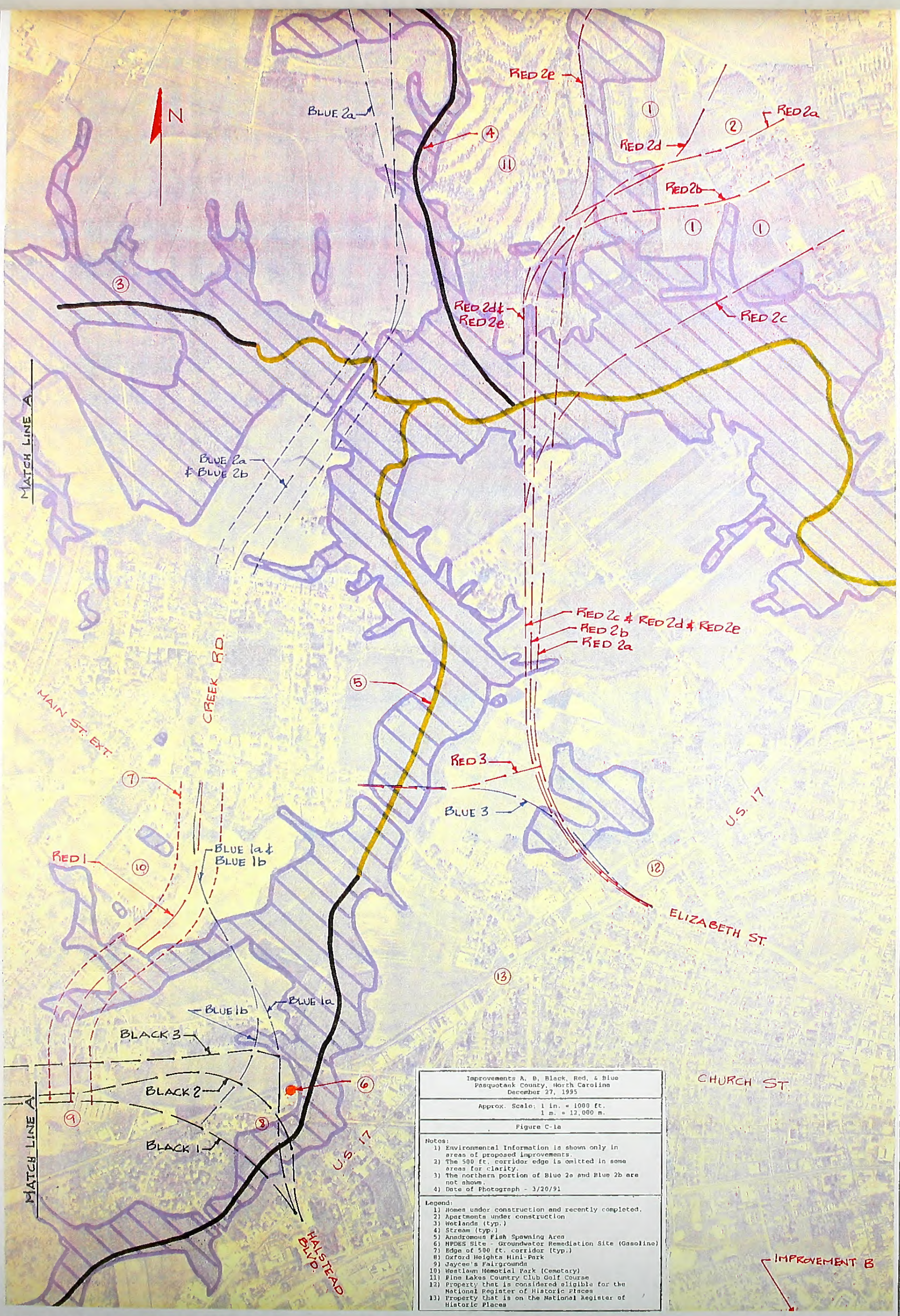
The Division has reviewed the alternatives for improvements included in the Elizabeth City Thoroughfare Plan. According to the Natural Heritage Program database, no rare species or significant natural areas have been identified along any of the alignments under consideration. We are not aware of any parks or recreational areas that would be affected by these projects. Pasquotank County, however, has not been subject to a systematic inventory for natural heritage elements. The absence of records in our database may be a reflection of that fact as much as of a true lack of natural values.

Although we cannot provide specific information on the natural communities located along the proposed thoroughfare alignments, we agree with the N.C. Wildlife Commission and the U.S. Fish and Wildlife Service that impacts to the stands of cypress-gum forest along Knobbs Creek should be minimized. Of particular concern in this regard are the crossings on new alignments proposed for "Black 2 revised" and "Blue 3 revised". We concur with recommendations made by U.S. Fish and Wildlife Service concerning appropriate measures to reduce the impacts of these two project segments. The other projects included within the thoroughfare plan all appear to be environmentally acceptable.

We appreciate having an opportunity to provide input into the early planning stages of this thoroughfare plan, and we hope to continue to be involved as the project develops.

PKM/SPH/gsr

P.O. Box 27687, Raleigh, North Carolina 27611-7687 Telephone 919-733-4181 FAX 919-715-3085



Improvements A, B, Black, Red, & Blue
Pasquotank County, North Carolina
December 27, 1995

Approx. Scale: 1 in. = 1000 ft.
1 m. = 12,000 m.

Figure C-1a

Notes:
1) Environmental Information is shown only in areas of proposed improvements.
2) The 500 ft. corridor edge is omitted in some areas for clarity.
3) The northern portion of Blue 2a and Blue 2b are not shown.
4) Date of Photograph - 3/20/91

Legend:
1) Homes under construction and recently completed.
2) Apartments under construction
3) Wetlands (typ.)
4) Stream (typ.)
5) Anadromous Fish Spawning Area
6) NPDES Site - Groundwater Remediation Site (Gasoline)
7) Edge of 500 ft. corridor (typ.)
8) Oxford Heights Mini-Park
9) Jaycee's Fairgrounds
10) Westlawn Memorial Park (Cemetary)
11) Pine Lakes Country Club Golf Course
12) Property that is considered eligible for the National Register of Historic Places
13) Property that is on the National Register of Historic Places

N

IMPROVEMENT A

MAIN ST. EXT.

MATCH LINE A

WELL FIELD RD.

THUNDER RD.

PROPOSED U.S. 17 BYPASS

BLACK3

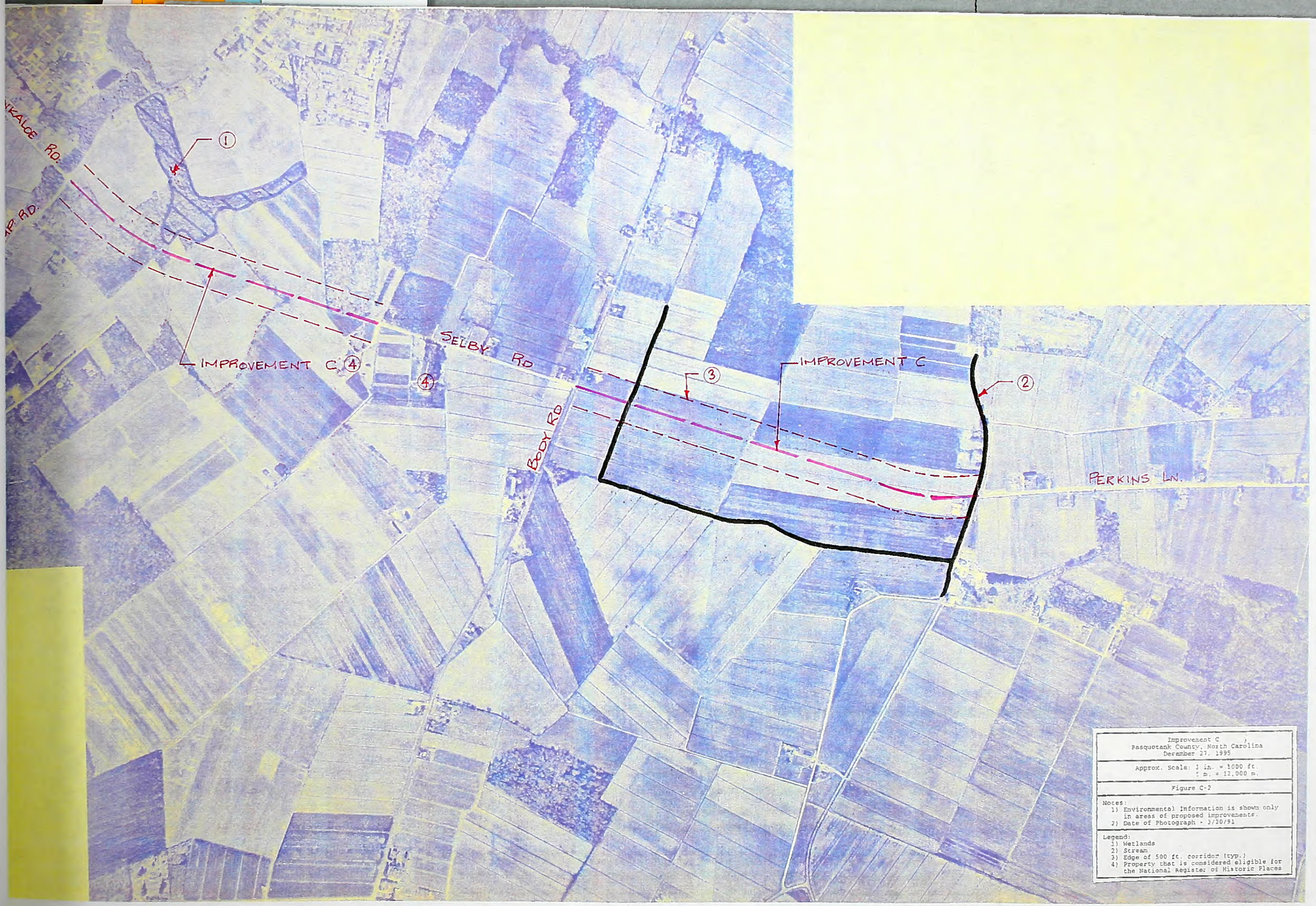
BLACK2

BLACK1

RED1

MATCH LINE A

Improvements A, B, Black, Red, & Blue Pasquotank County, North Carolina December 27, 1995
Approx. Scale: 1 in. = 1000 ft. 1 m. = 12,000 m.
Figure C-1b
Notes: 1) Environmental Information is shown only in areas of proposed improvements. 2) The 500 ft. corridor edge is omitted in some areas for clarity. 3) Date of Photograph - 3/20/91
Legend: 1) Wetlands (typ.) 2) Stream (typ.) 3) Edge of 500 ft. corridor (typ.) 4) Jaycee's Fairgrounds 5) Westlawn Memorial Park (Cemetary)



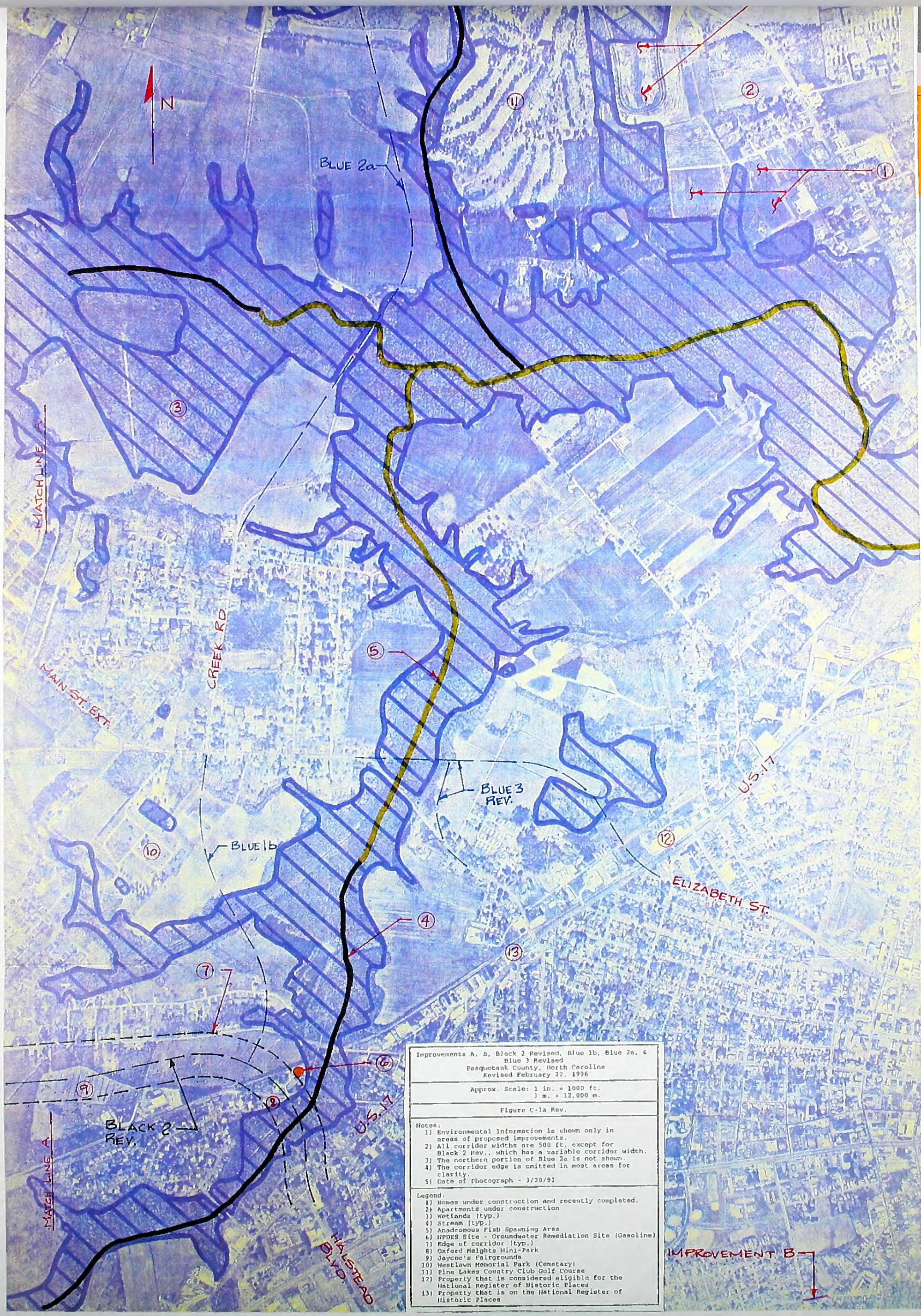
Improvement C
Pasquotank County, North Carolina
December 27, 1995

Approx. Scale: 1 in. = 1000 ft.
1 m. = 12,000 m.

Figure C-3

Notes:
1) Environmental Information is shown only in areas of proposed improvements.
2) Date of Photograph - 3/20/91

Legend:
1) Wetlands
2) Stream
3) Edge of 500 ft. corridor (typ.)
4) Property that is considered eligible for the National Register of Historic Places



Improvements A, B, Black 2 Revised, Blue 1b, Blue 2a, & Blue 3 Revised
Pasquotank County, North Carolina
Revised February 22, 1996

Approx. Scale: 1 in. = 1000 ft.
1 m. = 12,000 m.

Figure C-1a Rev.

Notes:
1) Environmental information is shown only in areas of proposed improvements.
2) All corridor widths are 500 ft, except for Black 2 Rev., which has a variable corridor width.
3) The northern portion of Blue 2a is not shown.
4) The corridor edge is omitted in most areas for clarity.
5) Date of Photograph - 3/20/91

Legend:
1) Homes under construction and recently completed.
2) Apartments under construction
3) Wetlands (typ.)
4) Stream (typ.)
5) Anadromous Fish Spawning Area
6) NPDES Site - Groundwater Remediation Site (Gasoline)
7) Edge of corridor (typ.)
8) Oxford Heights Mini-Park
9) Jaycee's Fairgrounds
10) Westlawn Memorial Park (Cemetary)
11) Pine Lakes Country Club Golf Course
12) Property that is considered eligible for the National Register of Historic Places
13) Property that is on the National Register of Historic Places

N

IMPROVEMENT A

MAIN ST. EXT.

MATCH LINE A

WELL FIELD RD.

PROPOSED U.S. 17 BYPASS

BLACK 2 REV.

THUNDER RD

MATCH LINE A

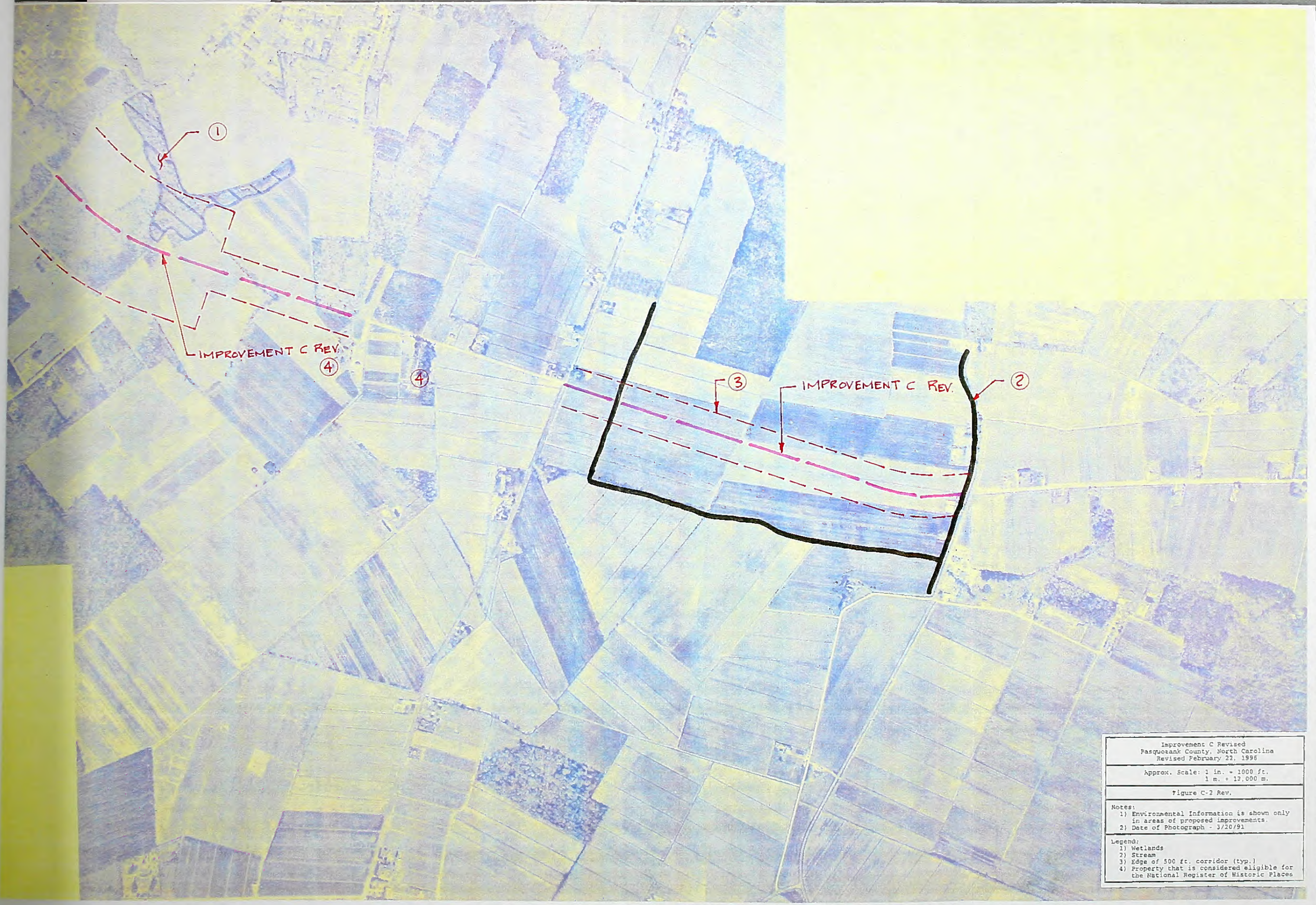
Improvements A, B, Black 2 Revised, Blue 1b, Blue 2a, & Blue 3 Revised
Pasquotank County, North Carolina
Revised February 22, 1996

Approx. Scale: 1 in. = 1000 ft.
1 m. = 12,000 m.

Figure C-1b Rev.

Notes:
1) Environmental information is shown only in areas of proposed improvements.
2) All corridor widths are 500 ft. except for Black 2 Rev., which has a variable corridor width.
3) The corridor edge is omitted in most areas for clarity.
4) Date of Photograph - 3/20/91

Legend:
1) Wetlands (typ.)
2) Stream (typ.)
3) Edge of corridor (typ.)
4) Jaycee's Fairgrounds
5) Wesslawn Memorial Park (Cemetary)



Improvement C Revised
Pasquotank County, North Carolina
Revised February 22, 1996

Approx. Scale: 1 in. = 1000 ft.
1 m. = 12,000 m.

Figure C-2 Rev.

Notes:
1) Environmental Information is shown only in areas of proposed improvements.
2) Date of Photograph - 3/20/91

Legend:
1) Wetlands
2) Stream
3) Edge of 500 ft. corridor (typ.)
4) Property that is considered eligible for the National Register of Historic Places

APPENDIX D

THOROUGHFARE PLAN STREET TABULATIONS AND RECOMMENDATIONS AND THE MUTUALLY ADOPTED THOROUGHFARE PLAN

Notes:

1) The information recorded in the "THOROUGHFARE PLAN STREET TABULATIONS AND RECOMMENDATIONS" tables is approximate and is accurate for planning purposes only.

2) The 2020 volumes were estimated using the assumption that all of the recommendations outlined in Section VI - subheading "Construction Alternative - Mutually Adopted 1996 Thoroughfare Plan" would be implemented.

THOROUGHFARE PLAN STREET TABULATIONS AND RECOMMENDATIONS

SECTION	DIST (KM)	PRESENT RDWY (M)	PRESENT ROW (M)	PRESENT CAP (VPD)	PRESENT 1995 VOL	FUTURE CAP (VPD)	FUTURE 2020 VOL	FUTURE RDWY XSEC	FUTURE ROW (M)
Body Road									
PAB to Simpson Ditch Rd	0.95	5.2	NA	9000	1400	9000	2300	NC	NC
Simpson Ditch to Selby Rd	2.04	5.2	NA	9000	3000	9000	3000	NC	NC
Selby Rd to Halstead Blvd	1.78	5.2	NA	9000	3000	9000	5600	NC	NC
Brooks Avenue									
Ehrinhaus St to Roanoke Ave	0.61	7.9	NA	12000	3600	12000	3800	NC	NC
Burgess Street									
Water St to Poindexter St	0.06	12.2	NA	12000	2300	12000	2800	NC	NC
Church Street									
Water St to Dyer St	0.59	5.8	NA	9500	4300	9500	4600	NC	NC
Dyer St to Press St	0.32	6.2	NA	9500	3000	9500	3300	NC	NC
Press St to Hughes Blvd	1.14	6.1	NA	9500	3000	9500	3300	NC	NC
Hughes Blvd to Forest Park Rd	1.93	5.8	NA	10000	2600	10000	7000	NC	NC
Colonial Avenue									
Water St to Road St(one way)	0.45	4.0-4.9	NA	7000	NA	7000	NA	NC	NC
Road St to Hughes Blvd	1.23	4.6	NA	4000	900	--	--	--	--
Road St to Hughes Blvd(one way)	1.23	4.6	NA	--	--	7000	2000	NC**	NC
Creek Road									
Pot of Gold Trail to Main St Ext	0.73	5.8	NA	10000	900	12000	12000	O*	30
Proposed Creek Rd Extension									
Pot of Gold Trail to U.S. 17	2.74	--	--	--	--	12000	10000	O*	30
Prop Halst Blv Conn to Main St Ex	1.20	--	--	--	--	40000	16000	F*	30
Edgewood Drive									
Parkview Dr to Weeksville Rd	1.24	6.1-11.0	NA	12500	2300	12500	4000	NC	NC
Ehringhaus Street									
Water St to Road St	0.42	19.2	18.3-27.4	26000	13200	26000	17000	NC	NC
Road St to Griffin St	0.94	19.2	27.4	26000	19600	26000	24000	NC	NC
Griffin St to Halstead Blvd	1.09	19.2	27.4	26000	17500	26000	22000	NC	NC
Halstead Blvd to Hughes Blvd	0.65	19.2	27.4	26000	16000	26000	16000	NC	NC

NC - No Change
CAP - Capacity at Level of Service D
NA - Not Available
PAB - Planning Area Boundary
RDWY - Sum of the widths of all travel lanes - If parking is permitted and the density of parked vehicles appears to impede traffic flow, then the roadway width was decreased to reflect this.

1 meter (m) = approx. 3.28 feet 1 kilometer (km) = approx. 0.62 miles

* - See Appendix F for the definition of the Roadway Cross-section (RDWY XSEC)
** - See Section VI - Subheading "Construction Alternative - Mutually Adopted 1996 Thoroughfare Plan" for operational changes.

THOROUGHFARE PLAN STREET TABULATIONS AND RECOMMENDATIONS

SECTION	DIST (KM)	PRESENT RDWY (M)	PRESENT ROW (M)	PRESENT CAP (VPD)	PRESENT 1995 VOL	FUTURE CAP (VPD)	FUTURE 2020 VOL	FUTURE RDWY XSEC	FUTURE ROW (M)
Elizabeth Street									
Water St to Road St	0.44	16.2	NA	26000	8000	26000	13400	NC	NC
Road St to Hughes Blvd	1.00	13.4	18.3	20000	8800	20000	13400	NC	NC
Proposed Elizabeth St Extension									
Hughes Blvd to Main St Ext	1.22	--	--	--	--	12000	5000	O*	30
Fairfax Avenue									
Raleigh St to Park Dr	0.34	7.9	NA	12500	NA	12500	NA	NC	NC
Foreman Bundy Road									
PAB to U.S. 17	4.80	5.5	18.3	9000	1500	9000	3700	NC	NC
Forest Park Road									
US 17 to Prop Halstead Blvd Conn	1.15	5.5	NA	9000	3000	9000	4000	NC	NC
Prop Hals Blv Con to Main St Ext	1.60	5.5	NA	9000	3000	9000	6000	NC	NC
Griffin Street									
Elizabeth St to McPherson St	0.78	4.6	NA	4000	NA	4000	NA	NC	NC
McPherson St to Ehrinhaus St	0.33	6.7	NA	11000	NA	11000	NA	NC	NC
Halstead Boulevard									
Herrington St to Roanoke Ave	1.62	19.2	45.7	37500	10700	26000	15000	NC	NC
Roanoke Ave to Walker Ave	0.90	19.2	45.7	37500	15000	26000	22500	NC	NC
Walker Ave to Hughes Blvd	0.88	19.2	45.7	26000	15000	26000	22500	NC	NC
Proposed Halstead Blvd Connector									
Hughes Blvd to Prop Creek Rd Ext	0.55	--	--	--	--	40000	18000	G*	21
Pro Creek Rd Ex to Pro US 17 Byp	4.77	--	--	--	--	12000	8000	O*	30
Herrington Street (NC 34)									
Road St to Weeksville Rd	1.30	6.7	NA	11500	6700	11500	10000	NC	NC
Hoffler Street									
Herrington St to Southern Ave	0.45	6.1	NA	10500	NA	10500	NA	NC	NC
Hughes Blvd (see US 17)									

NC - No Change
CAP - Capacity at Level of Service D
NA - Not Available
PAB - Planning Area Boundary
RDWY - Sum of the widths of all travel lanes - If parking is permitted and the density of parked vehicles appears to impede traffic flow, then the roadway width was decreased to reflect this.

1 meter (m) = approx. 3.28 feet 1 kilometer (km) = approx. 0.62 miles

* - See Appendix F for the definition of the Roadway Cross-section (RDWY XSEC)

THOROUGHFARE PLAN STREET TABULATIONS AND RECOMMENDATIONS

SECTION	DIST (KM)	PRESENT RDWY (M)	PRESENT ROW (M)	PRESENT CAP (VPD)	PRESENT 1995 VOL	FUTURE CAP (VPD)	FUTURE 2020 VOL	FUTURE RDWY XSEC	FUTURE ROW (M)
Main Street									
Water St to Dyer St	0.59	7.9	NA	12000	2000	12000	2200	NC	NC
Dyer St to Hughes Blvd	1.17	4.3	NA	4000	2600	--	--	--	--
Dyer St to Hughes Blvd(one way)	1.17	4.3	NA	--	--	7000	2000	NC**	NC
Main Street Extension									
Hughes Blv to Realigned Portion	0.40	5.8	18.3	10000	7200	10000	2000	NC	NC
Prop Eliz St Ext to Creek Rd	0.62	5.8	18.3	10000	7200	10000	7000	NC	NC
Creek Rd to Prop US 17 Byp Conn	2.89	5.8	NA	10000	3700	10000	9000	NC	NC
Prop US 17 Byp Conn to US 17	5.56	5.8	NA	10000	2600	10000	4000	NC	NC
Pro Relocated Port of Main St Ex									
Exi Main St Ex to Pro Eliz S Ex	0.43	--	--	--	--	12000	2000	O*	30
NC 343									
Southern PAB to US 158/NC 34	3.00	5.9	18.3	10500	1800	10500	3000	NC	NC
US 158/NC 34 to Northern PAB	3.00	5.9	30.5	10500	3000	10500	4700	NC	NC
Proposed Main St Ext Connector									
Prop US 17 Byp to Main St Ext	3.15	--	--	--	--	12000	6000	O*	30
Oak Stump Road									
U.S. 17 to Chesterfield Dr	0.79	10.4	NA	21000	8300	21000	10000	NC	NC
Chesterfield to Simpson Ditch	4.07	5.8	NA	10000	1500	10000	6500	NC	NC
Park Drive									
Fairfax Ave to Parkview Dr	0.72	5.8	NA	9500	NA	9500	NA	NC	NC
Parkview Drive									
Hoffler St to Edgewood Dr	0.85	9.8	NA	20000	6300	20000	9500	NC	NC
Edgewood Dr to River Rd	0.50	5.2	NA	8500	1500	8500	6000	NC	NC
Peartree Road									
Road St to Halstead Blvd	1.24	7.3	NA	12500	4500	12500	5500	NC	NC
Halstead Blvd to Perkins Ln	1.91	5.8	NA	10000	5000	10000	6000	NC	NC
Perkins Ln to PAB	2.35	5.8	NA	10000	1500	10000	1800	NC	NC

NC - No Change
CAP - Capacity at Level of Service D
NA - Not Available
PAB - Planning Area Boundary
RDWY - Sum of the widths of all travel lanes - If parking is permitted and the density of parked vehicles appears to impede traffic flow, then the roadway width was decreased to reflect this.

1 meter (m) = approx. 3.28 feet 1 kilometer (km) = approx. 0.62 miles

* - See Appendix F for the definition of the Roadway Cross-section (RDWY XSEC)
** - See Section VI - Subheading "Construction Alternative - Mutually Adopted 1996 Thoroughfare Plan" for operational changes.

THOROUGHFARE PLAN STREET TABULATIONS AND RECOMMENDATIONS

SECTION	DIST (KM)	PRESENT RDWY (M)	PRESENT ROW (M)	PRESENT CAP (VPD)	PRESENT 1995 VOL	FUTURE CAP (VPD)	FUTURE 2020 VOL	FUTURE RDWY XSEC	FUTURE ROW (M)
Perkins Lane									
Peartree Rd to Pitts Chapel Rd	2.27	5.5	18.3	9000	250	9000	3500	NC	NC
Pitts Chapel Road									
Weeksville Rd to PAB	2.80	5.8	NA	10000	1500	10000	8000	NC	NC
Poindexter Street									
Ward St to Burgess St	0.43	8.8	NA	12000	4900	12000	10000	NC	NC
Burgess St to Elizabeth St	0.24	5.5	NA	8000	NA	8000	NA	NC	NC
Raleigh Street									
Riverside Ave to Fairfax Ave	0.24	7.9	NA	12500	2300	12500	2500	NC	NC
River Road									
Park Dr to Parkview Dr	0.55	5.5	NA	8500	600	8500	800	NC	NC
Parkview to 1400m N of Weeksville	1.03	5.2	NA	9000	1600	9000	5000	NC	NC
1400m N Weekvil to 430m N Weeksvil	0.97	5.2	NA	9000	1600	18000	5000	H*	18
430m N of Weeksville to Weeksville	0.43	5.2	NA	9000	1600	9000	5000	NC	NC
Riverside Avenue									
Southern Ave to Raleigh St	1.07	8.5	NA	12500	3300	12500	4000	NC	NC
Road Street									
US 17 to Elizabeth St	1.12	8.5	18.3	12000	15100	12000	16000	NC	NC
Elizabeth St to Ehrinhaus St	0.65	8.5	9.1	12000	12100	12000	13000	NC	NC
Ehrinhaus St to Herrington St	0.82	8.5	9.1	12000	7000	12000	7000	NC	NC
Roanoke Ave									
Road to 150m South of Brooks Ave	0.60	7.3	NA	12000	2700	12000	3000	NC	NC
150m South of Brooks to Halstead	0.93	5.5	NA	8000	2200	8000	3000	NC	NC
Selby Road									
Body Rd to Proposed Extension	0.75	5.5	NA	9000	100	9000	7000	NC	NC
Proposed Selby Road Extension									
Oak Stump Rd to exist Selby Rd	1.25	--	--	--	--	12000	7000	K*	30
Body Rd to Peartree Rd	1.55	--	--	--	--	12000	4000	K*	30

NC - No Change in Cross-section of Road
CAP - Capacity at Level of Service D
NA - Not Available
PAB - Planning Area Boundary
RDWY - Sum of the widths of all travel lanes - If parking is permitted and the density of parked vehicles appears to impede traffic flow, then the roadway width was decreased to reflect this.

1 meter (m) = approx. 3.28 feet 1 kilometer (km) = approx. 0.62 miles

* - See Appendix F for the definition of the Roadway Cross-section (RDWY XSEC)

THOROUGHFARE PLAN STREET TABULATIONS AND RECOMMENDATIONS

SECTION	DIST (KM)	PRESENT RDWY (M)	PRESENT ROW (M)	PRESENT CAP (VPD)	PRESENT 1995 VOL	FUTURE CAP (VPD)	FUTURE 2020 VOL	FUTURE RDWY XSEC	FUTURE ROW (M)
Shepherd Street									
Road St to Walston St(1 way)	0.39	7.9	NA	14000	1000	--	--	--	--
Road St to Walston St(2 way)	0.39	7.9	NA	--	--	12000	2000	NC**	NC
Walston St to Southern Av(2 way)	0.05	7.9	NA	12000	600	12000	2000	NC	NC
Simpson Ditch Road									
US 17 to Body Rd	4.61	5.5	18.3	9000	1200	9000	4000	NC	NC
Southern Avenue									
Ehrinhaus St to Shepherd St	0.21	18.0	24.4	26000	11900	26000	14000	NC	NC
Shepherd St to Massachusetts Ave	0.75	vary	NA	12000	9100	12000	11000	NC	NC
Massachusetts Ave to Hoffler St	0.38	9.8	NA	20000	6300	20000	8000	NC	NC
Trinkaloe Road									
US 17 to Oak Stump Rd	1.22	5.3	NA	9000	400	9000	3000	NC	NC
US 17									
PAB to 430 m S of Trinkaloe Rd	6.56	4 la	85.3	45000	14000	45000	15000	NC	NC
430 m S of Trinkaloe to Oakstump	2.64	5 la	30.5	37500	20300	37500	22000	NC	NC
Oakstump Rd to Halstead Blvd	0.76	5 la	30.5	37500	19100	37500	22000	NC	NC
Halstead Blvd to Church St	0.71	5 la	30.5	26000	18000	26000	18000	NC	NC
Church St to Main St	0.53	4 la	24.4	20000	24000	26000	22000	C*	27
Main St to Elizabeth St	0.46	4 la	24.4	20000	22000	26000	20000	C*	27
Elizabeth St to Road St	1.37	4 la	24.4	20000	19000	26000	17000	C*	27
Road St to South side of bridge	0.42	4 la	24.4	20000	28000	28000	31000	C*	27
Bridge over Knobbs Creek	0.22	4 la	30.5	40000	30000	40000	31000	NC	NC
N side brg to Col of Albem S Ent	1.07	5 la	NA	26000	30000	26000	28000	NC	NC
Coll of Albe S Ent to Whitehurst	0.42	4 la	NA	20000	22100	26000	25000	C*	27
Whitehurst Ln to Hastings Ln	0.29	5 la	NA	26000	22100	26000	25000	NC	NC
Hastings Ln to Culpepper Ln	0.81	4 la	NA	20000	22100	26000	25000	C*	27
Culpepper Ln to Creek Rd	1.95	5 la	NA	37500	15900	26000	20000	NC	NC
Creek Rd to PAB	7.15	4 la	NA	50000	10400	50000	20000	NC	NC

NC - No Change
CAP - Capacity at Level of Service D
NA - Not Available
PAB - Planning Area Boundary
RDWY - Sum of the widths of all travel lanes - If parking is permitted and the density of parked vehicles appears to impede traffic flow, then the roadway width was decreased to reflect this. Alternately, the number of lanes may be given.

1 meter (m) = approx 3.28 feet 1 kilometer (km) = approx. 0.62 miles

* - See Appendix F for the definition of the Roadway Cross-section (RDWY XSEC)
** - See Section VI - Subheading "Construction Alternative - Mutually Adopted 1996 Thoroughfare Plan" for operational changes.

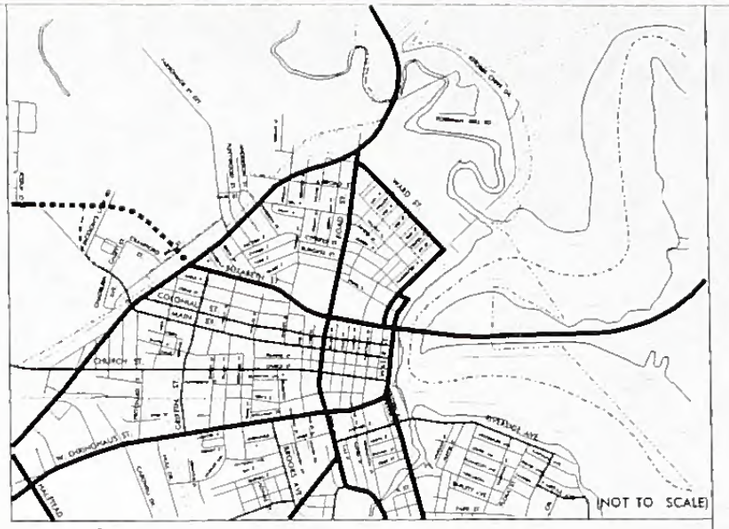
THOROUGHFARE PLAN STREET TABULATIONS AND RECOMMENDATIONS

SECTION	DIST (KM)	PRESENT RDWY (M)	PRESENT ROW (M)	PRESENT CAP (VPD)	PRESENT 1995 VOL	FUTURE CAP (VPD)	FUTURE 2020 VOL	FUTURE RDWY XSEC	FUTURE ROW (M)
Proposed US 17 Bypass									
US 17 South of city to US 17 North of city	15.50	--	--	--	--	54000	9000	A*	70
US 158 - NC 34									
PAB to SR 1244	2.43	7.3	30.5-45.7	13000	8800	37500	19000	C*	27
SR 1244 to Country Club Rd	0.40	10.4	45.7	23000	11700	37500	22000	C*	27
Country Club to 120m S SR 1257	0.40	7.3	45.7	13000	14900	37500	30000	C*	27
120m S SR 1257 to 2100m E Water S	1.83	7.3	45.7	13000	14900	37500	30000	***	30
2100m E Water S to 600m E Water S	1.50	7.3	45.7	13000	14900	37500	30000	C*	27
600m E of Water St to Water St	0.60	vary	NA	vary	14900	vary	30000	NC	NC
Walker Avenue									
Halstead Blvd to Brooks Ave	1.44	vary	NA	9500	NA	9500	NA	NC	NC
Proposed Walker Avenue Extension									
Brooks Ave to Roanoke Ave	0.08	--	--	--	--	12000	NA	O*	30
Ward Street									
Road St to Poindexter St	0.82	6.1	18.3	9500	3700	9500	7400	NC	NC
Water Street									
Burgess St to Elizabeth St	0.21	vary	NA	12000	2300	12000	5000	NC	NC
Elizabeth St to Fearing St	0.28	vary	18.3	12000	13500	**	17500	**	**
Fearing St to Ehrinhaus St	0.15	vary	18.3	26000	16000	26000	20000	NC	NC
Weeksville Rd (NC 34)									
PAB to Western Entran USCG Base	3.10	6.7	30.5	12000	2300	12000	2800	NC	NC
West Entr USCG Base to River Rd	1.16	19.2	30.5	49000	8000	37500	16000	NC	NC
River Rd to Herrington St	2.17	19.2	30.5	37500	10700	37500	16000	NC	NC

NC - No Change
CAP - Capacity at Level of Service D
NA - Not Available
PAB - Planning Area Boundary
RDWY - Sum of the widths of all travel lanes - If parking is permitted and the density of parked vehicles appears to impede traffic flow, then the roadway width was decreased to reflect this.

1 meter (m) = approx. 3.28 feet 1 kilometer (km) = approx. 0.62 miles

* - See Appendix F for the definition of the Roadway Cross-section (RDWY XSEC)
** - See Section VI - Subheading "Construction Alternative - Mutually Adopted 1996 Thoroughfare Plan" for more information.
*** - 4 lane undivided shoulder section



ELIZABETH CITY
THOROUGHFARE PLAN

LEGEND

	EXISTING	PROPOSED
FREEWAY/EXPRESSWAY	▬▬▬	▪▪▪▪▪
MAJOR THOROUGHFARE	———	- - -
MINOR THOROUGHFARE	———	·····

ADOPTED BY:

CITY OF ELIZABETH CITY: JULY 1, 1996

RECOMMENDED BY STATEWIDE PLANNING BRANCH: AUGUST 19, 1996

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION: SEPTEMBER 5, 1996

Figure D-1

ELIZABETH CITY

PASQUOTANK COUNTY

NORTH CAROLINA

Prepared by the
North Carolina Department of Transportation
Division of Highways-Statewide Planning Branch
in cooperation with the
U.S. Department of Transportation
Federal Highway Administration

Approximate Scale
1 inch = 1829 meters
1 inch = 6000 feet

June 17, 1996

Figure D-2


PARSONAGE ST. EXT.
KNOBBS CREEK DR.
FOREMAN MILL RD.
DURANT ST.
ANDERSON ST.
FLEETWOOD ST.
JESSUP ST
JACKSON'S LAKE RD.
FAIR ST
BROAD ST.
WARD ST.
WILSON
BELL ST.
GREGORY ST.
SAWYER ST.
BANK ST.
CHADBOURN ST.
GRADY ST.
GREEN LEAF ST.
5TH ST.
WILLOW
4TH ST.
3RD ST.
WALNUT ST.
JUNIPER ST.
2ND ST.
CENTER ST.
1ST ST.
QUEEN ST.
POINDEXTER ST.
FACTORY ST.
CYPRESS ST.
YORK ST.
GLADE ST.
HARVEY ST.
CYPRESS ST. ROAD
BURGESS ST.
PEARL ST.
BEECH ST.
CHESNUT ST.
CASEY ST.
CRAWFORD ST.
MILL ST.
CHADBURN AVE.
ELIZABETH ST.
MAPLE ST.
CEDAR ST.
COLONIAL ST.
MAIN ST.
HOLLY ST.
LOCUST ST.
HARVEY ST.
DYER ST.
COKE ST.
ELLIOTT ST.
POOL ST.
MARTIN ST.
MAGNOLIA ST.
WATER ST.
ASHE
WEEKS
BAXTER ST.
CHALK
GROVES
CHURCH ST.
PEARING ST.
DUNSTON LN.
SHIRLEY ST.
SELDON ST.
WESTOVER ST.
CULPEPPER ST.
McPHERSON ST.
GRICE ST.
PRITCHARD ST.
GRIFFIN ST.
BYRD ST
PRESS ST.
SPELLMAN ST.
SOUTHERN ST.
SHEPARD ST.
WHITE ST.
BROWN ST.
EDGE ST.
CASE ST.
MARTIN ST.
HERRINGTON ST.
RIVERSIDE AVE.
MORGAN ST.
HUNTER ST.
WOODRUFF AVE.
JONES AVE.
HUNNICUTT AVE.
TUSCARORA
BARLETT AVE.
WAKEHAM ST.
CAROLINA AVE.
PREYER AVE.
CAMDEN
FAIRFAX Ave.
FLORA ST.
CIR.
PARK ST.
W. EHRINGHAUS ST.
LASSITER ST.
WRIGHT ST.
ALBEMARLE ST.
SPEED
TAYLOR ST.
GRAVES LN.
MANGUM ST.
BROOKS AVE.
LIBERATION ST.
CORDAIR DR.
CATALINA AVE.
RAY ST.
BURNELL ST.
ADAMS ST.
HULL DR.
CAROWELL DR.
HALSTEAD
A ST.
(NOT TO SCALE)

APPENDIX E
LEVEL OF SERVICE

LEVEL OF SERVICE

Level of Service (LOS) is a quantitative measure that describes the quality of driving experience on a segment of road by examining factors such as safety, driver comfort and convenience, speed and travel time, and freedom to maneuver. Six levels of service are used to identify the conditions existing on highways or streets. The following describes the six levels of service:

1. **Level of Service A** represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger or pedestrian is excellent.

2. **Level of Service B** is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A because the presence of others in the traffic stream begins to affect individual behavior.

3. **Level of Service C** is in the range of stable flow, but marks the beginning of the range of flow in which the operations of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeable at this level.

4. **Level of Service D** represents unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions. Fluctuations in volume and temporary restrictions to flow may cause substantial drops in operating speeds. Drivers have little freedom to maneuver, and comfort and convenience are low. However, these conditions can be tolerated for short periods of time.

5. **Level of Service E** represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such maneuvers.

Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor variations within the traffic stream will cause breakdowns.

6. **Level of Service F** is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion. Level of Service F is used to describe the operating conditions within the queue, as well as the point of the breakdown. It should be noted, however, that in many cases operating conditions of vehicles or pedestrians discharged from the queue may be quite good. Nevertheless, it is the point at which arrival flow exceeds discharge flow which causes the queue to form and Level of Service F is an appropriate designation for such point.

It should be noted that these definitions are general and conceptual in nature, and they apply primarily to uninterrupted flow. The *Highway Capacity Manual, Special Report 209, Third Edition, 1994* may be consulted for more information regarding LOS on each facility type.

APPENDIX F
TYPICAL THOROUGHFARE CROSS SECTIONS

TYPICAL THOROUGHFARE CROSS SECTIONS

Cross section requirements for thoroughfares vary according to the desired capacity and level of service to be provided. Each street section must be individually analyzed and its cross section requirements determined on the basis of amount and type of projected traffic, existing capacity, desired level of service, and available right-of-way.

Typical cross sections used in North Carolina are shown in Figure F-1. These cross sections are typical for facilities on new location and where right-of-way constraints are not critical.

The cross sections recommended for proposed projects located in the Elizabeth City Planning Area are tabulated in Appendix D. While the cross sections shown in Appendix D are the desired cross sections, there may be situations where a deviation is required. However, since detailed design is not performed at the thoroughfare planning level, it is not possible to discover all of the unique situations that would require deviations from the typical cross sections shown.

Cross sections "A" and "L" are typical for controlled access freeways. The 14 m (46 ft) grassed median is the minimum desirable median width, but there could be some variation from this depending upon design considerations. Right-of-way requirements would typically vary upward from 70 m (228 ft) depending upon cut and fill requirements.

Cross section "B", seven lane curb and gutter, should be used only in special situations such as when widening from a five lane section and when right-of-way is limited. Even in these situations, consideration should be given to converting the center turn lane to a median so that cross section "D" is the final cross section.

Cross section "C", five lane curb and gutter, is typical for major thoroughfares where frequent left turns are anticipated as a result of abutting development or frequent street intersections.

Cross sections "D", "E", and "M" are used on major thoroughfares where left turns and intersecting streets are not as frequent. Left turns would be restricted to a few selected intersections. The 4.9 m (16 ft) median is the minimum recommended for an urban boulevard type cross section.

Cross section "F" is recommended for urban boulevards or parkways to enhance the urban environment and to improve the compatibility of major thoroughfares with residential areas. A minimum median width of 7.3 m (24

ft) is recommended with 9.1 m (30 ft) being desirable.

Cross section "G" is recommended for major thoroughfares where projected travel indicates a need for four travel lanes but traffic is not excessively high, left turning movements are light, and right-of-way is restricted. An additional left turn lane would probably be required at major intersections. This cross section should be used only if the above criteria is met. If right-of-way is not restricted, future strip development could take place and the inner lanes would become de facto left turn lanes.

Cross section "H" illustrates a three-lane road. For two-directional traffic flow, the center lane can be a turning lane. For one-directional flow, all three lanes flow in the same direction with a parallel road typically operating in the opposite direction.

Cross sections "I" and "J" are usually recommended for urban minor thoroughfares since these facilities usually serve both land service and traffic service functions. Cross section "I" would be used on those minor thoroughfares where parking on both sides is needed as a result of more intense development.

Cross section "K" is used in rural areas or for staged construction of a wider multi-lane cross section. On some thoroughfares, projected traffic volumes may indicate that two travel lanes will adequately serve travel for a considerable period of time. For areas that are growing and future widening will be necessary, the full right-of-way of 30 m (100 ft) should be purchased.

The urban curb and gutter cross sections all illustrate the sidewalk adjacent to the curb with a buffer or utility strip between the sidewalk and the minimum right-of-way line. This permits adequate setback for utility poles. If it is desired to move the sidewalk farther away from the street to provide additional separation for pedestrians or for aesthetic reasons, additional right-of-way must be provided to insure adequate setback for utility poles.

The right-of-ways shown for the typical cross sections are the minimum rights-of-way required to contain the street, sidewalks, utilities, and drainage facilities. Cut and fill requirements may require either additional right-of-way or construction easements. Obtaining construction easements is becoming the more common practice for urban thoroughfare construction.

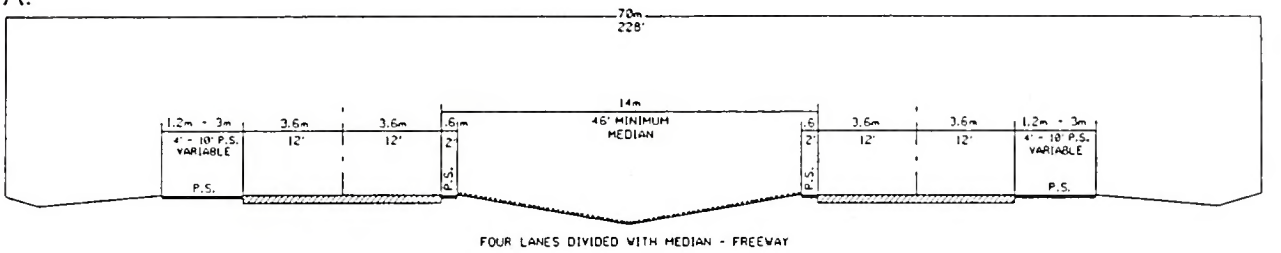
If there is sufficient bicycle travel along the

thoroughfare to justify a bicycle lane or bikeway, additional right-of-way may be required to contain the bicycle facilities. The North Carolina Bicycle Facilities Planning and Design Guidelines should be consulted for design standards for bicycle facilities. **Cross sections "N", "O", and "P"** are typically used to accommodate bicycle travel.

FIGURE F-1

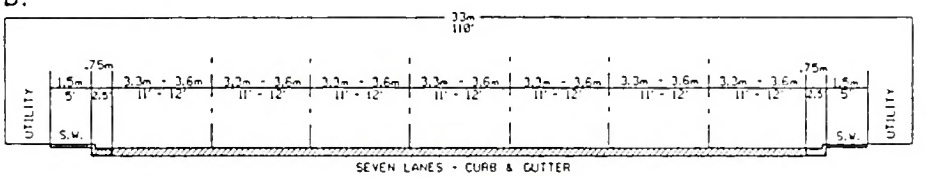
TYPICAL THOROUGHFARE CROSS SECTIONS

A.



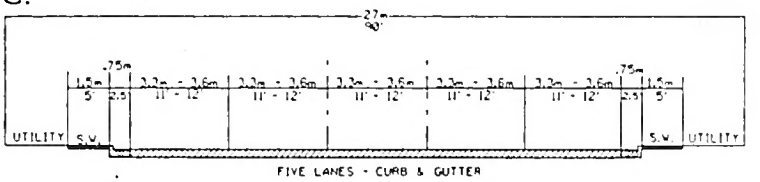
FOUR LANES DIVIDED WITH MEDIAN - FREEWAY

B.



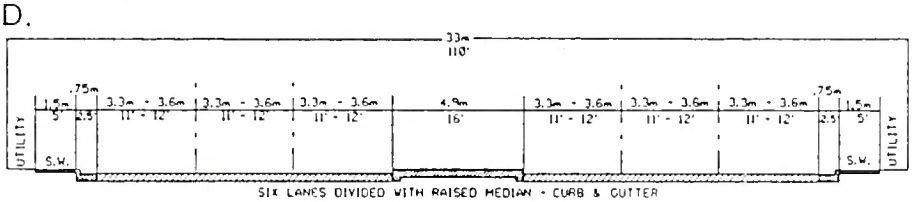
SEVEN LANES - CURB & GUTTER

C.



FIVE LANES - CURB & GUTTER

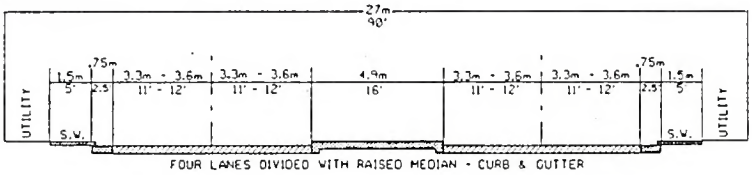
D.



SIX LANES DIVIDED WITH RAISED MEDIAN - CURB & GUTTER

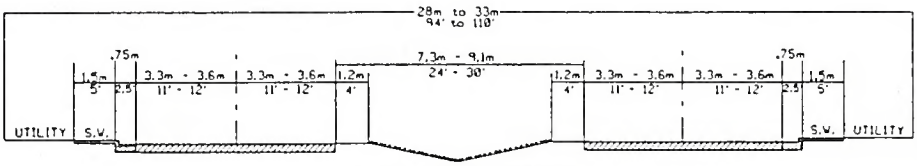
TYPICAL THOROUGHFARE CROSS SECTIONS

E.



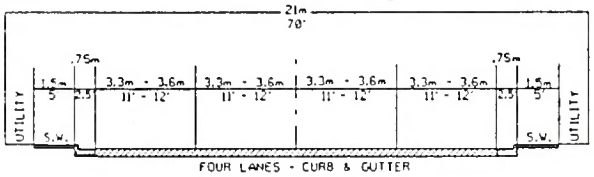
FOUR LANES DIVIDED WITH RAISED MEDIAN - CURB & GUTTER

F.



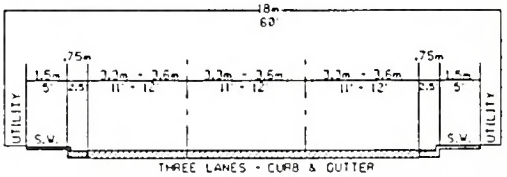
FOUR LANES DIVIDED - BOULEVARD
GRASS MEDIAN

G.



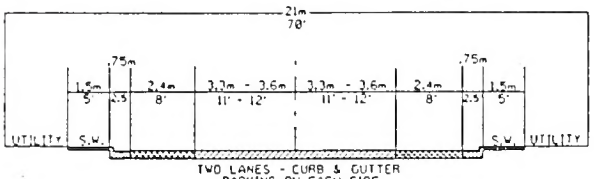
FOUR LANES - CURB & GUTTER

H.



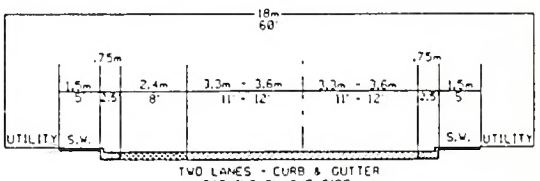
THREE LANES - CURB & GUTTER

I.



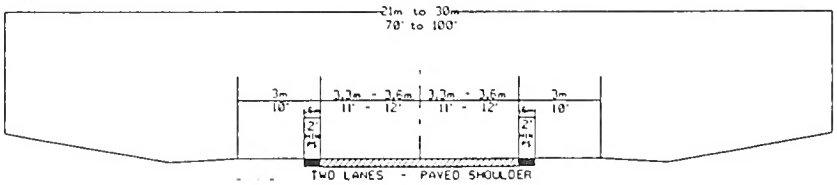
TWO LANES - CURB & GUTTER
PARKING ON EACH SIDE

J.



TWO LANES - CURB & GUTTER
PARKING ON ONE SIDE

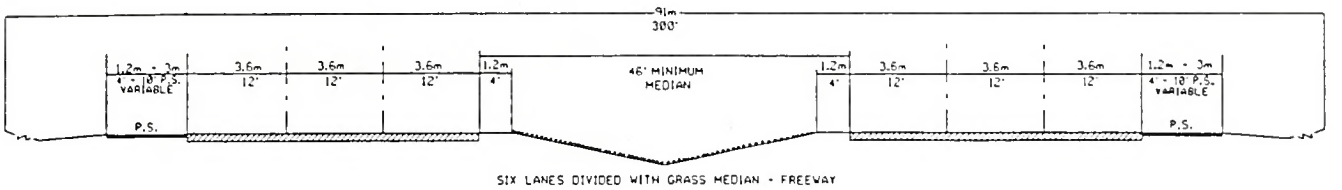
K.



TWO LANES - PAVED SHOULDER

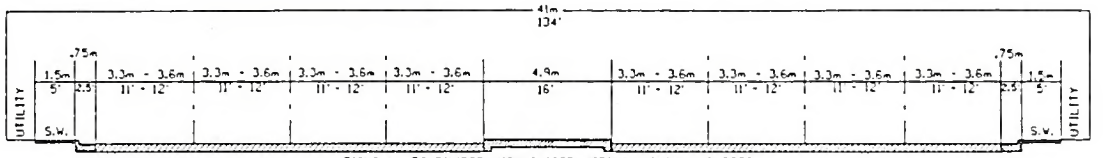
TYPICAL THOROUGHFARE CROSS SECTIONS

L.



SIX LANES DIVIDED WITH GRASS MEDIAN - FREEWAY

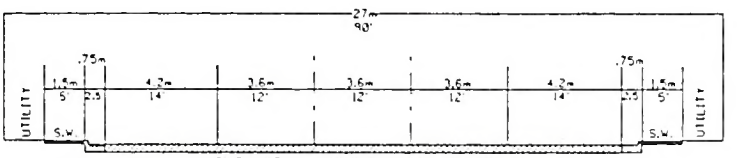
M.



EIGHT LANES DIVIDED WITH RAISED MEDIAN - CURB & GUTTER

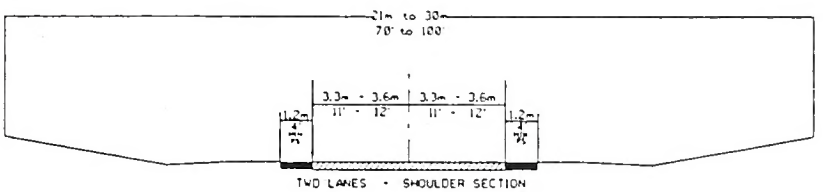
TYPICAL THOROUGHFARE CROSS SECTIONS FOR ACCOMMODATING BICYCLES

N.



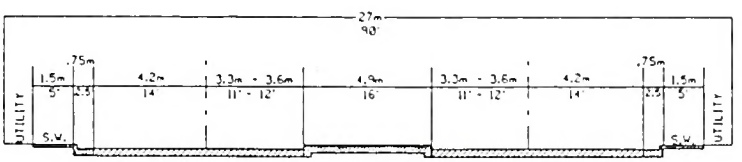
FIVE-LANE ROADWAY WITH CURB & GUTTER,
STANDARD INSIDE LANES & WIDENED CURB LANES

O.



TWO LANES - SHOULDER SECTION

P.



FOUR LANES DIVIDED WITH RAISED MEDIAN - CURB & GUTTER,
STANDARD INSIDE LANES & WIDENED CURB LANES